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A PUBLICATION OF THE DEFENSE ACQUISITION UNIVERSITY

## **Defense Transformation—An Imperative for Survival and Competitive Advantage in a Changing World**



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Managing a Product Development Team

Army Logistics White Paper

Schedule as an Independent Variable—"SAIVing" Acquisition Excellence

Planning for Technology Transition

Aircraft Launch & Recovery Equipment (ALRE) Flight Safe Program

Corrosion Prevention & Control

**Arthur K. Cebrowski**

*Director, Force Transformation  
Office of the Secretary of Defense*



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# Interview with Arthur K. Cebrowski

## Director, Office of Force Transformation

**D**rive change or be driven by it. That is the strong philosophy of retired Vice Adm. Arthur K. Cebrowski, director force transformation. In the following interview, conducted for *Defense AT&L* by Frank Swofford, NDIA industry chair at the Defense Acquisition University (DAU), Cebrowski explains why transformation is an imperative for survival and competitive advantage in a changing world. He warns against seeing technology as the only focus of transformation, stressing that just as important is the element of human behavior.

**Q** Good morning Admiral Cebrowski. It's wonderful to be here today talking with you about force transformation. I would like to start with a general question, and then we'll get into more specifics. Would you give us your perspective of what force transformation is, and if priorities are a part of that scenario, how do they affect the military forces?

**A** First of all, the reason for transformation is to develop a sustained competitive advantage. It recognizes that the world is changing. In many respects this nation is in an enviable position that we need to maintain. I'm talking in a security context. Since the world is changing, then we, of course, have to change too. Consider, for example, how few of the Fortune 500 companies from 50 years ago are still in existence today. That can't be allowed to happen to us, so from a national security point of view, we have to make the corporate adjustments. That's the objective of transformation: broad and sustained competitive advantage.



Transformation has many elements. Perhaps one of the most important is that it involves creating or anticipating the future. Either you create your future or you become the victim of the future that someone else creates for you. The United States, by virtue of its position in history, has the ability to create a future that furthers the dignity of man and all the values we hold dear.

When we talk about transforming our defense capability, we're talking about the co-evolution of technology concepts and organizations to achieve a broadened capability base. Evolving organizations—people—to think and act differently is a real and a new challenge. But our people must change so that new technology concepts can be viewed from the perspective of how these capabilities best fit achieving sustained competitive advantage on the battlefield.

**Q** Are there any priorities that you're focusing on in terms of technology?

**A** It's a common error to think that transformation has a technology focus. It is only one of many elements. Central to transformation is cultural change—the change in the set of attitudes, beliefs, and values that a group has. Additionally, warfare is all about human behavior. Technologies are not only going to be catalysts to change culture and behavior, but they can also be a result of changes in culture or behavior.

The reasons that we do transformation have to do with changes in context. The strategic context, which has to do with such things as the movement from the industrial

age to the information age, is one of the largest strategic shifts that we have going on today. We have changes in threat context. It's no longer a great power on a great power. The characteristics of warfare are broadened considerably. I think there's a growing trend towards increased perversity in warfare for example. These things have to be accounted for. Third, there are the falling barriers to competition in many areas where we have always felt we were truly in a superior position—at sea, in cyberspace, and in physical space, for instance. We can be challenged in all of those areas and certainly in the field of biological warfare. The largest single factor that changes the competitive landscape from the technical point of view is the increasing availability of very high quality information technology. Whether you're talking about materials, explosives, vehicle design, or whatever, information technologies are the "in" thing for all of the other technologies. So because there are very low barriers to access these kinds of technologies, the barriers to competition for our adversaries are also reduced across a very broad front. So our focus is about strategic need and overall transformation of that strategy. The president and secretary elevated transformation to the level of national strategy, corporate strategy, and risk management strategy.

**Q** *That, to my mind, is probably the most important thing that any administration has brought to the business of defense because for the first time, we have focused on concepts, strategies, and architecture. It seems to me that's the fundamental change in the way all the military services work together in this business called defense. You mentioned culture. It seems as if culture is the biggest challenge that you have in trying to get the Services to focus on this sort of strategic vision. Is that a fair statement?*

**A** It's a challenge. Cultural change is an output. It is also as difficult to define output as it is difficult to define input. Culture is described as the set of unstated assumptions that tend to govern the value structure, and hence the behavior, of a group of people. And exactly because

they're generally unstated, they're taken as inherently true. They're not considered or debated, and people can't even necessarily list what they are. So it's not particularly helpful to make a pronouncement that we're going after cultural change. The surrogate for it is changed behavior. That's really what you focus on.

**Q** *You've been called "the father of network-centric warfare." We spend a lot of time talking about that at DAU. Can you give us a thumbnail sketch of what network-centric warfare is? [Editor's note: See also "Scientific American Recognizes Cebrowski for Outstanding Leadership in Technology" on page 6.]*

**A** Network-centric warfare is a concept that, at the highest level, is the military's response to the information age. With all the great tectonic shifts in society, from—for example—the agrarian age to the industrial age or the industrial age to the information age, the sources of power and wealth change. Society makes the adjustment—and it's normally a difficult adjustment and one that takes a long time. There is the chafing between the rules from the old age and those of the new age, but over time these are resolved. We see this going on in society today. For example, we have all of these court cases involving intellectual property. The information age is probably the best example of the chafing that is going to go on. The military is going to reflect that. It has been said that a nation makes war the same way it makes wealth. If the sources of power and wealth change for the nation broadly, they will change in an analogous (but not identical) way within the military. It is not identical because the enterprise is different. It's a rather unique undertaking to look at from the perspective of national defense. If you look, therefore, at what generates power in this age, you find it comes from information processes, from information itself, and is supported and enabled by information technology.



*Network-centric  
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as opposed to  
information technology.*



## Arthur K. Cebrowski

### *Director, Force Transformation Office of the Secretary Of Defense*

**R**etired Vice Adm. Arthur K. Cebrowski was appointed by the secretary of defense as director, force transformation effective Oct. 29, 2001, reporting directly to the secretary and deputy secretary of defense.



The secretary of defense called for the creation of this new office in support of President Bush's broad mandate to transform the nation's military capabilities. The transformation process challenges the status quo with new concepts for American defense to ensure an overwhelming and continuing competitive advantage for America's military for decades to come.

As director, Cebrowski will be advocate, focal point, and catalyst for transformation. He will link transformation to strategic functions, evaluate the transformation efforts of the military departments, and promote synergy by recommending steps to integrate ongoing transformation activities. Among his primary responsibilities, Cebrowski will monitor service and joint experimentation programs and make policy recommendations to the secretary and deputy secretary of defense.

Cebrowski entered the Navy through the Reserve Officers Training Corps in 1964. He is a naval aviator and commanded Fighter Squadron 41 and Carrier Air Wing EIGHT. He commanded the assault ship USS GUAM, the aircraft carrier USS MIDWAY, and the USS AMERICA Battle Group. He has combat experience in Vietnam and Desert Storm. His joint assignments included service as the director, command, control, communications and computers (J-6), Joint Staff. After serving as the president of the Naval War College in Newport, Rhode Island, Cebrowski retired from the Navy in 2001 with over 37 years of service.

Cebrowski was born in Passaic, New Jersey. He is a 1964 graduate of Villanova University, holds a master's degree in computer systems management from the Naval Post Graduate School, and attended the Naval War College.

form, and organize themselves when they're in the networked condition? This is what network-centric warfare focuses on. We find, for example, tremendous value coming from the shared awareness that's available to people who are networked. We also see that the quality of information improves in a networked environment. Time-lines can be compressed. When we put the force in the networked environment, we see the de-massification of warfare—that is, the substitution of information for mass. One need look only at precision weapons for an example of that. By virtue of the fact that the bomb or the weapon is now informed, you need decidedly fewer of them than before. You see this operating at all levels of war. You see it in terms of strategic choices. Different strategic choices are available. Different operational choices are available. And certainly tactical-level behavior changes. Ultimately, we end up having to focus at the tactical level because that's where transactions take place. The tactical level is the check-out counter in the great department store of national security. It's at that transaction level that the behavior and the values are really revealed as well as the power of the underlying technologies. That's where you ultimately focus.

**Q**

*One of the bottom lines is that the PEO [program executive officer] soldier is dealing with the problem today. The combat soldier on the ground needs connectivity to know what enemy's over the next hill and who's there as support against the enemy. That's a great application, in my view, of what network-centric warfare boils down to in a practical, warfighting environment.*

**A**

Look at Operation Iraqi Freedom and you could see a multiplicity of these things operating simultaneously. At the individual soldier level, you saw soldiers and marines using the personal role radio—a little lip microphone coming out from underneath the helmet. Once soldiers have that at the squad level or the fire-team level, their tactics can change because they are no longer limited by how far they can shout or see hand signals. The warfighter's set of available tactics is larger than that of someone who is not similarly networked, and that affords an advantage.

If you look at the speed of response in the efforts to target Saddam Hussein, intelligence was developed, decisions made, locations determined, forces assigned, weapons selected, and a strike made, all within about 12 minutes. **[Editor's note: This interview took place before the capture of Saddam Hussein.]** This is an example of the time compression that's available when you put forces in the networked environment. It also shows how the barriers between various elements of the force get broken down. You can achieve a higher level of teaming than you could before. Consider the operations in Western Iraq, which is largely an example of what we call the non-con-

Network-centric warfare is first of all about human behavior, as opposed to information technology. Recall that while "a network" is a noun, "to network" is a verb, and what we are focusing on is human behavior in the networked environment. How do military forces behave, per-



tinuous battlespace—a large number of small forces operating. You can't do that if you're not networked. There are several examples of special operations forces being able to work with Air Force and Navy aircraft and with other sources of force and fire to perform the mission that they had. That's an example of the operational level of war with choices not available to people who are not networked.

**Q** *I have read that you're a student of Eric Beinhocker [MIT Sloan School of Management] and his organizational concept of innovative strategy. Would you please relate his concepts to DoD transformation for us?*

**A** Well if you recall, step one was looking after your core competencies, pursuing basic good stewardship with your physical plant and the team that's executing. This is where you look after modernization, recapitalization, and efficiencies. What you're trying to do is be better still within the competitive space that you have already selected. This isn't transformation. This is just plain good management, being good stewards of the resources the nation's given us.

The second level is to push out the boundaries of current core competencies so that you are able, while performing the same basic missions, to add capabilities that you didn't have before. This is the sort of thing that I'm talking about when you put people in a networked condition—they're able to reach for tactics that they couldn't previously reach for. We've seen this, for example, in air-to-air combat, where we have a lot of data. One of the things we find is that fighters who are networked together and networked with other sensed platforms consistently outperform those who do not have data links. They do so because they can reach for tactics that the un-networked people can't because it's either



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physically impossible or it's not possible without increased risk. I suppose an extreme example is the shift to the non-continuous battlespace, the non-linear battlefield. You're doing air-land warfare as you have before, but you're approaching it a decidedly different way.

The third item is the bold bets. We're not talking about betting the family farm but about placing a bet that can have a profound impact on your future. If you look back, you can see some of these. The decision to pursue the global positioning system is one. That was a decision to enter a new competitive space, to decide that we could compete on the basis of superior navigation and time-keeping. Who would have thought it would be a central feature of military competition? It's a major jump. Of course it's a fairly large investment, but in the whole scheme of investments for the military, it's actually quite small. And the impact was profound. It changed the character of warfare and it changed what societies could do, not just what soldiers could do. Another excellent example of a big bet is nuclear-armed ballistic missiles on submarines being able to sense and communicate through space—stealth.

Those are what you might call big bets. The trouble is that they're all looking backward. The hard part is to identify similar items looking forward.

What might they be? I've got an idea of the areas into which they might fall. We call these "issues of regret" because we believe that 10 or 15 years from now, people may look back and say, "I regret that we never pursued that." The power is potentially so great in these areas. Take non-lethal weapons. Very important. Right now soldiers at a checkpoint are given little more than a toggle switch capability on the lives of people that approach that checkpoint. It's lethal force or nothing. It's a risk calculus we shouldn't have to subject our soldiers to. There's a lot we

## Scientific American Recognizes Cebrowski for Outstanding Leadership in Technology

**A**rthur K. Cebrowski, director of DoD's Office of Force Transformation, has been named by *Scientific American* magazine as one of the "Scientific American 50." The annual list, which recognizes outstanding leadership in technology, appears in the December 2003 issue.

John Rennie, the magazine's editor in chief, explains: "Every year we watch how certain individuals and organizations play pivotal roles in directing that future's emergence. The *Scientific American* 50 is our chance to shine a light on these incredibly deserving leaders in research, industry, and policy."

Cebrowski was named a policy leader in defense because of his work over the last year in the network-centric approach to warfare. Network-centric warfare is the U.S. military's response to the Information Age by shifting emphasis from platforms like ships, aircraft and tanks, to unleashing the knowledge embedded in robust and distributed networks.

"What we are seeing, in moving from the industrial age to the information age, is what amounts to a new theory of war," Cebrowski said. "We have come to call that new theory of war 'network-centric warfare.' It is not about the network; rather, it is about how wars are fought and how power is developed."

The *Scientific American* 50 spotlights leaders of the year in areas such as research, business, and policy. These leaders are named in categories such as agriculture, chemicals and materials, communications, computing, defense, energy, environment, and medical treatments.

**Editor's note:** The above information is based on a press release issued by the American Forces Press Service in November 2003. That press release drew in part on a *Scientific American* release.

don't know about non-lethal force and its application. It's time and it's appropriate that we broaden the choices we give our leaders and our individual warfighters.

Next, directed-energy weapons of varying kinds. I'm not talking just about laser weapons, but in general about the kinds of weapons that travel at the speed of light. Think back to what happened when we put motorized vehicles on the battlefield and people no longer had to move on

foot or horseback. What a profound difference that made. Then we introduced aircraft. We essentially made an order of magnitude jump from walking and riding to motorized vehicles. We make another order of magnitude jump from land vehicles to air vehicles. Then we increase that power when we go to very high-speed air vehicles, say in the form of very high-speed weapons. Very high-speed weapons may be traveling on the order of 5,000 feet per second, mach 4.5 roughly, or even doubling that to 10,000 feet per second—but then consider 186,000 miles per second, the speed of light. Each one of these prior changes altered the character of the battlespace. Just imagine the magnitude change you get with speed-of-light weapons! We already have speed-of-light communications. Now what we are looking at is being able to marry the speed of weapons with the speed of communications. This can introduce a profoundly different military world. We can undertake a leadership position in this area or we can respond to someone else's being in a leadership position. The choice is ours.

Biologics is another area we must pursue. The number of battlefield deaths from infection went down throughout the 1930s and 40s as a result of better hygiene and antibiotics. Before that time, infection was the dominant factor in battlefield deaths. With the advent of aseptic practices and antibiotics, the dominant factor became death from the wounds themselves. Then with the advent of precision warfare, we took control of that portion of the physical battlespace and the total number of deaths resulting from wounds dropped. We could lose control of the biological battlespace—and that's not just on the battlefield but in society at large. This has to be a major focus area for homeland security in general. It's another area in which we can see a potential for big bets.

We can see changes in intelligence. Some big bets need to be placed in the realm of social intelligence. That's intelligence about the transactions between people broadly within societies because the frontiers of national security are actually at the fault lines deep within societies. Consequently we need the ability to look, understand, and operate deep in these fault lines to know the mindsets of potential adversaries. We know that this is going to be another area where we're going to want to be looking for big bets. What else?



*You've not talked about space.*



Space is another one. Space is one of the great common areas, and we have had and still have a superior position in space. The barriers, it's true, are falling, and that's because the capability per unit of mass on orbit is going up dramatically as a result of the power of information technology. Consequently, microstats have become very vi-



able. They can't fully supplant large vehicles in orbit for certain applications, but they can for some. This is an area that looks just like something out of Clayton Christensen's book *The Innovator's Dilemma*. Yes, it is not the top end system, but it is an invasion from underneath with a lesser capability. Over time, that capability is growing. The costs for it are coming under control. It's a different business model. It's a different risk management model. It approaches the market differently. In fact, it creates new markets. This is an area that's ripe for placing the big bets.

**Q** *Wonderful summary. Let me shift, if I may, in the time we have left to the acquisition side of the business. One of the issues that the under secretary of defense for acquisition, technology, and logistics thinks about probably every day is how to provide—I think this is a Pete Aldridge quote—“a context within which [he] can make decisions about individual programs.” As you know, in the acquisition business we see procurement proposals every day. The question is, how do we make those decisions in the context of your and Deputy Secretary of Defense Wolfowitz's vision about transformation? That has two aspects to it: managing the core business yes, but also finding ways to improve systems within the transformation architecture you are developing. I see problems on both ends. How would you answer that kind of concern on the part of the under secretary of defense for acquisition?*

**A** First of all, issues concerning acquisition start long before you get to acquisition. When that doesn't happen, we have the acquisition tail wagging the national defense dog, and dysfunction follows. Currently in the DoD, there's a major effort going on to elevate the strate-

gic planning portion of the PPBES [*planning, programming, budgeting, and execution system*], and that's appropriate because you very much need that. We have to shift executive time to the strategic beginnings of this process for maximum impact. By the time system decisions have been made, architectures have been determined, software has been written, and you're already into the development and testing processes, changes become very costly and very difficult. At that point, we're overtaken by the tyranny of the program of record. We need management structures and processes to allow us to diminish that tyranny. There are several factors that happen when you do this. One of them is that we come to realize that there's a difference—a substantive difference—in approach based on the product category that you're pursuing. If you're pursuing—to go back to Beinhocker's model—a Category I item, which is a modernization or recapitalization, then the processes that we already have in place are very well suited for that. That's the main line of the effort, but that is not the transformational effort. That is not where you find disruptive concepts or technologies.

For Category II and III efforts, we should be looking at different processes with different metrics. For example, if you're doing modernization and recapitalization, you already have a great deal of information on the performance of existing capabilities. You can change those capabilities, use the same metrics, and make a determination as to whether or not you're being appropriately rewarded for pursuing the new program. When you introduce a new capability, you have two fundamental problems. One is that you cannot cost it reliably, and the second is that you do not have a metric for its performance comparable with the



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leadership position.  
The choice is ours.*



previous system. Because you are pursuing the Category II or Category III change, you're going to get profoundly different behavior changes—behavior that's in a different category. How does one, for example, compare the value of this tactical toolbox versus some other array of tactics that a different technology would provide? You therefore need a different approach; you obtain operational articles as soon as possible. Many elements of acquisition get pushed very early in the process. You produce operational articles. You put them in the operating forces. You start gathering data. You start to see what the performance or the behavior change is, and when you see that happening on the ground, then you can start making judgments about its value. Furthermore, by virtue of the fact that you are introducing items sooner, you're getting costing information sooner. Even though this might not be fully consistent with what you're hoping for in terms of an end-state capability, you don't have a basis in experience and in data to make a judgment about this end state. You may want to change course. Look at the example of the high-speed vessel. This was just a ship taken up from trade and it saw combat action. When you look at it on its face value and you use the metrics that we normally use to determine utility of the ship, it doesn't measure up. One would never pursue it according to the

old rules. But once we actually put it in the hands of the Navy, the Army, the logisticians, the naval special warfare forces, all of a sudden they realized its value. They could do some things that they couldn't do before. By virtue of the fact that they then developed hands-on experience with this ship, they could say, "Well, I need this, I need that, change this, modify that," and we're moving into the next phase. It started out as a very disruptive lease that the institutional department did not want, and we now have four of them in operation. I think we're in the



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process of procuring a fifth. All of them are different. We're all changing. We're learning as we go and essentially using this methodology to create our future. Of course there are spin-offs as well because you can look at these designs or technologies in this application and you can say, "Wow, they had payoffs. Maybe I should try something similar over in another application." It encourages people to look for different approaches. You can do that with a ship. What else can you do it with?



*Absolutely. We've traditionally looked to DARPA [Defense Advanced Research Projects Agency] and advanced concept development to push new concepts. Do these innovative teams seem to you to be working in the context that you just described for this application?*



Yes. There is no one best methodology or approach. In the traditional acquisition approach, we frequently think in terms of developing off-ramps so that we have a way to, you might say, get off the program short of encouraging financial or technical problems and get something in the field. In your Category II and III changes, in those places where you're talking about disruptive technologies, what you're actually trying to do is create capability on-ramps.

When you have a vehicle that you essentially lease, you know you say, "Well there's no new technology here. This is all existing." Once you put it in the operating force, then you start turning to your other agencies, your government laboratories, DARPA, ACTD [Advanced Concept Technology Demonstration] approaches and the like; they can then build on this.



*Build those on-ramps?*



**A**

That's right. Create the on-ramps and your capabilities grow from there. Next there's a difference in perspective and time and in time scale and technology scale in these various things. DARPA explores technology concepts. They do a marvelous job of it. They create the technologies that will be the technical catalyst for transformation, which is very, very powerful for us. The approach of the Office of Force Transformation is from the operational concept point of view. We try to look at behaviors that will be a catalyst for profound changes in capabilities. So largely then what one can do is back up and look for the technology concept pairing.

**Q**

*Well put.*

**A**

We have an approach to doing this. Sue Peyton with her ACTD program has another approach. Her approach looks at a recognized need, at maturing technologies, does the pairing, and hopes to bring that capability to fruition. My approach is to look at unarticulated needs. That is the place where the institution has not been enlightened! There is a need to look at methodologies that the institution has not considered pursuing.

**Q**

*Now a couple of last questions. We have a new acquisition strategy approach that is either evolutionary or spiral. Spiral seems to fit your model somewhat better in the sense that spiral gives one opportunities to create new on-ramps as one learns by doing. We're grappling with how best this might help the transformation process. Have you seen any examples of that so far?*

**A**

What would Mike Wynne point to? How would he answer that?

**Q**

*I don't know how he would answer that. We've been out talking about those two complementary parts of the process, and in my head, spiral development was always a place where if someone had a good idea and if there was money from ACTD or DARPA sources, you could then go and try it out.*

**A**

That's right. If you apply the spiral approach to an existing system, what you're doing is what folks would have called P3I [*preplanned product improvement*], which is fine. The spiral development that I'm interested in is development upstream of a program decision, not downstream. A P3I is a Category I improvement, a modernization. Done well, it creates more capability. What we look for in the spiral, perhaps more than anything

else, is the creation not just of capability, but of new knowledge. The creation of opportunities that are our on-ramps that we talked about. So you can't logically separate experimentation from this process. Similarly, you cannot separate the requirement into a separate process.

**Q**

*Exactly. Good point.*

**A**

And then, because you're in the business of creating on-ramps, the need is the dog and the acquisition is the tail. That's what you want to get to.

**Q**

*One last question: Lessons learned from Crusader? Any comments you would make about that?*

**A**

Not from an acquisition point of view. The cancellation of Crusader was the result of the realization that our acquiring of capabilities has to be consistent with the strategic contexts in which we plan to use them. From a need point of view, it seemed to be a mismatch. Another thing: there are modernizations and recapitalizations over time operating on a basis of decreasing returns on investment, aggravated by a decreased utility as the strategic context changes. That itself is further aggravated by the very long capability cycle times. To the extent that we do not shorten capability cycle time, modernizations and recapitalizations tend to have decreased value, and spiral development approaches have increased value. I'd rather refer to spiral development as continuous adaptive acquisition. Further, it's meant to be continuous because learning has to be continuous. We want to be on a learning curve, not a step function—particularly not a step function where you only make a step every 15 or 20 years. We want it to be adaptive also because the need will change as the strategic context changes. I think we have to shed the concept of first in class, wherein our methodology is subordinated to the industrial age concept of economical production run.

**Q**

*That is certainly a different way of thinking.*

**A**

So the notion that the first thing to come off the line has to meet the requirements documents specifications and be fully combat-capable and supportable is, I think, inconsistent with the way capabilities are developed in this age.

**Q**

*Thank you very much, Admiral Cebrowski. We appreciate your time.*



# SAIVing Acquisition Excellence

*Lt. Col. Anthony “Tony” Potts, USA*

**D**uring the 1970s and 1980s, with the Cold War as the driver, performance was the independent variable. Planning to fight against overwhelming numbers impelled developers of weapon systems to emphasize performance over other variables. To fight an enemy at a 3-to-1 deficit required precision weapon systems with little room to trade off performance characteristics. Following the fall of the Soviet Union in 1989 and the subsequent overwhelming victory over Iraq in 1991, the Department of Defense (DoD) faced

the task of downsizing military forces and programs in response to a declining defense budget. The result for the acquisition community was to shift the focus of programs from performance to cost. Program managers (PMs) began to trade off performance and to extend schedules in order to maintain their acquisition programs within cost.

In SAIV, schedule is the primary program driver. This is not, however, a license for PMs to disregard cost or to provide systems with less capability than required by the warfighter. SAIV balances schedule, cost, and requirements but maintains schedule as the primary driver.

SAIV isn't a buzzword for undisciplined cost growth. It is a multi-disciplined function bound with parameters for both cost and performance. Program managers, at all levels, must conduct intensive program cost analyses that provide realistic cost data from which to baseline programs. SAIV is also not an excuse to deliver a product that doesn't meet user performance requirements. Interaction with users in developing a time-phased, incremental approach for performance capabilities ensures that threshold capabilities are never compromised.

Why schedule? Schedule is the forcing function that drives other parameters. It is as much a matter of discipline to meet schedule in acquisition as it is for a battalion com-

**Move over Performance as an Independent Variable (PAIV) and Cost as an Independent Variable (CAIV), Schedule as an Independent Variable (SAIV)—a disciplined approach to responsible acquisition leadership and management—is the latest initiative in acquisition reform.**

mander to make his start point (SP) on time. Just as other units depend on the battalion commander, so PMs have both the soldier and other acquisition programs depending on them to deliver on schedule.

The ramifications of not making schedule are far-reaching. First, schedule cannot slip without driving up cost. Costs increase because years have been added to the program. You must maintain both the production and technology base. Closing down certain aspects of the program is usually not feasible. People with institu-

tional knowledge of the program are generally moved to other programs where their skills can be immediately put back to use, and it is very difficult to regain that lost knowledge. Additionally, program delays may cause production lines to be stopped, and there is generally a large, often prohibitive, cost associated with stopping production and then restarting.

## SAIV Begins Early

To ensure the warfighter is provided with required capabilities as rapidly as possible, the materiel developer must understand the tenets of SAIV and apply them to the program. SAIV begins early in the acquisition process. Once the mission needs statement (now the initial capabilities document [ICD]) is approved, the combat developer translates the need into operational requirements (capabilities description document [CDD]). It is here that the foundation for SAIV is laid. The combat developer can no longer take an all-or-nothing approach to requirements. The Joint Capabilities Integration and Development System (JCIDS) now replaces the previous requirements generation process and requires that CDDs be blocked into increments to allow the deployment of an initial military capability that meets a current operational need that is capabilities-based and anchored in proven technology. The first set of blocked requirements in the CDD must represent the minimal essential capability required by the

*Potts is the product manager, Apache Modernization and Recapitalization. He holds a bachelor's degree in management information systems from Murray State University and a master's degree in business administration from the University of Kentucky.*



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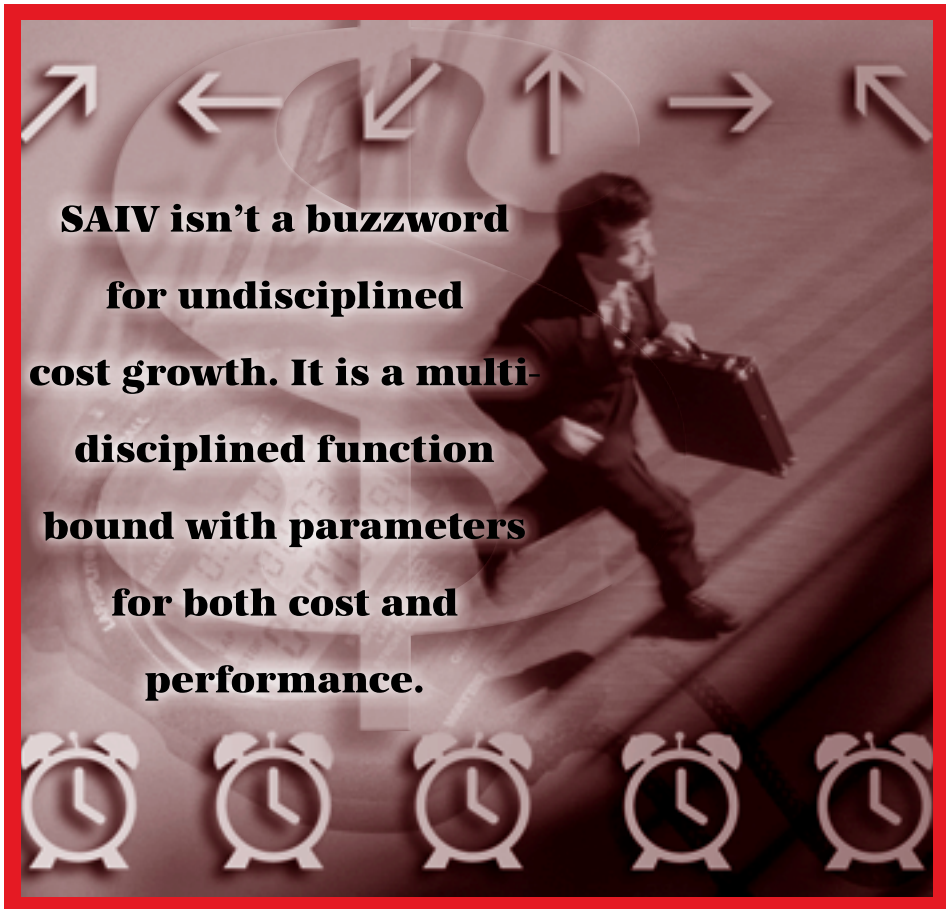
warfighter or other capabilities that enhance combat effectiveness, where technology is mature enough to meet those requirements without risk to schedule. The capabilities are based on a functional area analysis (FAA) and outlined in the ICD. Additional requirements may be added to Block I as objective requirements that allow the materiel developer to expend funds on their development if technology matures faster than anticipated, but does not jeopardize the initial procurement if those capabilities are not realized. Block II capabilities and beyond are also based on the FAA, which assesses mission needs for operational capabilities, projected threat assessment, and assessment of technologies beyond the first blocked increment. These capabilities may not be fully known yet but may be loosely outlined in a spiral development approach.

It is critical for the materiel developer to be involved up front and early with the ORD or capabilities production document (CPD) development. This is not so that the materiel developer can provide less capability than the combat developer requires in order to facilitate meeting ORD/CPD requirements. The materiel developer is there to act as an advisor to the combat developer on the state of technology. The PM can alert the combat developer to requirements that are not technologically feasible within the stated time frame of the increment or block. He can also assist the requirements community in determining

the best requirements block to insert advanced technology requirements. It is crucial that combat and materiel developers not push the limits of technology in a Block I CDD/CPD requirement. However, if that capability is a key performance parameter for the system to meet operational needs, then realistic cost estimates and developmental schedules must be established to avoid cost overruns and schedule slips.

Parallel with the development of the CDD/CPD is the development of the acquisition plan and/or strategy. This is another foundation product that will determine the PM's ability to provide combat-critical systems to the warfighter in a timely manner. In planning the contract strategy, the PM mustn't lose sight of the fact that program budgets are never really secure. Numerous demands are placed against limited resources, and rarely are a program's funds untouched throughout its lifespan. Understanding this, PMs must develop contract strategies that allow for the successful execution of the program even if funds previously allotted to the program are not available.

Contract strategies should maximize the use of options to the greatest extent possible. The number and size of options will likely depend on several factors, such as low rate initial production (LRIP) quantities and economic order quantities. However, contracts should be broken down into options that allow the PM to buy the lowest



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After the CDD/CPD has been completed, the materiel developer has to translate the operational requirements into performance-based specifications. The DoDD 5000.1 states: "When using performance-based strategies, contractual requirements shall be stated in performance terms, limiting the use of military specifications and standards to Government-unique requirements only." Performance-based specifications allow for multiple alternative technical approaches to achieve the stated requirement. The implication is that when not constrained by restrictive specifications, the military can maximize the use of commercial off-the-shelf (COTS) and government off-the-shelf (GOTS) items as well as the creativity of industry. This reduces the risk of both cost overruns and schedule slips for the development of military-unique equipment.

number of systems reasonable without driving up costs. Costs can be kept under control if these options are identified during the contracting phase where competition between vendors will tend to keep costs under control. Contracts that have large options may jeopardize their ability to meet schedule if the funding available is not sufficient to cover the entire option. In this case, contract modifications have to be made, and this will both delay deliveries and increase cost.

### **The Schedule is Key**

The second part of the acquisition plan/strategy that is paramount to the foundation of SAIV is the schedule. Military officers, with their aggressive Type A personalities, tend to be unrealistic in the development of schedules. It is essential to strike a balance between the warfighter's needs to get operational capabilities to the field as rapidly as possible, and realistic developmental time lines, based on either proven or maturing technologies. Technology readiness levels are excellent tools a PM can use to determine when technology is ready for insertion or production development. Materiel developers should never underestimate the hidden challenges of software development and integration, hardware development and integration, or testing, certification, and qualification. Since "schedule" is the cornerstone of SAIV, the importance of developing a realistic schedule on which to base the program cannot be overstated.

### **Developing the Budget**

The final step is the development of a budget that is sound and reflects the financial requirements to meet the needs of the program. Loss of some current year funding should never jeopardize the ability of the program manager to execute the program. It should represent only a quantity of systems (under options) that cannot be procured during that acquisition cycle. The PM should also develop an unfunded requirements (UFR) strategy to replace current year funding in order to meet military quantity or capability requirements.

### **Discipline Drives Success**

The foundation for SAIV must be laid in the acquisition plan, contract strategy, CDD/CPD, performance-based specification, and budget. Once the foundation for SAIV has been put into place, program managers will be able to execute programs that provide useful military capabilities to the operational user as rapidly as possible. Program managers will be able to trade off quantities and capabilities responsibly without jeopardizing program schedule or execution. SAIVing acquisition excellence is a disciplined approach to responsible acquisition leadership and management.

**Editor's note:** The author welcomes comments and questions. He can be reached at [anthony.potts1@us.army.mil](mailto:anthony.potts1@us.army.mil).



PRESIDENT NOMINATES  
**JOHN YOUNG**  
AS PENTAGON'S PRINCIPAL DEPUTY FOR ACQUISITION



**T**he President has submitted to the Senate the nomination of John J. Young Jr., of Georgia, to be the Pentagon's second-in-charge defense acquisition executive. The nomination was forwarded to the Senate on Jan. 23, 2004. When confirmed by the Senate, Young would become the principal deputy under secretary of defense (acquisition, technology and logistics), a position previously occupied by Michael Wynne, who is the current acting under secretary of defense (acquisition, technology and logistics).

Young is currently the assistant secretary of the Navy (research, development and acquisition). He has served as the Navy's service acquisition executive (SAE) since

July 2001, overseeing crucial ACAT I programs such as the Virginia-class submarine, DD(X) destroyer, and Littoral Combat Ship. Prior to his Pentagon job as the Navy SAE, Young was a staff member for the Senate Appropriations Committee's defense subcommittee where he served as the staff analyst for a variety of Defense Department research, development, test and evaluation programs as well as environmental restoration and compliance programs.

Young earned a bachelor's degree from Georgia Institute of Technology and a master's in aeronautics and astronautics from Stanford University.

# Planning for Technology Transition

*James H. Dobbins*

**B**efore we can understand the importance of planning for technology transition, we must understand what technology transition means. What is the difference between technology *transition* and technology *transfer*?

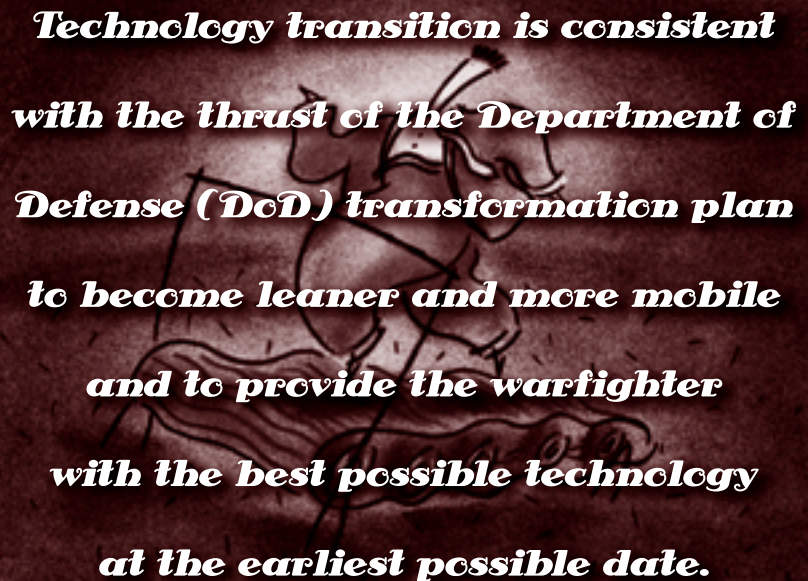
Technology *transition* is the process by which technology deemed to be of significant use to the operational military community is transitioned from the science and technology environment to a military operational field unit for evaluation and then incorporated into an existing acquisition program or identified as the subject matter for a new acquisition program. This is different from technology *transfer*, which is a technology partnership between government and industry by means of which, technology developed by one party is transferred to the other party for development and use, often with residual rights to the transferring party. The government may develop a technology in one of its labs and transfer it to industry, the government holding rights of some kind to the developed products. The reverse is also possible.

## Why Do Technology Transition?

The objective of technology transition is to make the desired technology available to the operational units as quickly as possible and at the lowest cost. Technology transition is consistent with the thrust of the Department of Defense (DoD) transformation plan to become leaner and more mobile and to provide the warfighter with the best possible technology at the earliest possible date. Systems provided to the operational community for evaluation remain with those operational units upon completion of the evaluation and are called “residual units.”

## Where Does the Transitioned Technology Originate?

The laboratory environment that produces the technology may be either a government laboratory or an industry research and development facility, and the technology of interest may be specifically for military use or may



***Technology transition is consistent with the thrust of the Department of Defense (DoD) transformation plan to become leaner and more mobile and to provide the warfighter with the best possible technology at the earliest possible date.***

be dual-use technology (usable by both military and civilian organizations). The military applications may require some additional refinements not available in the civilian counterpart.

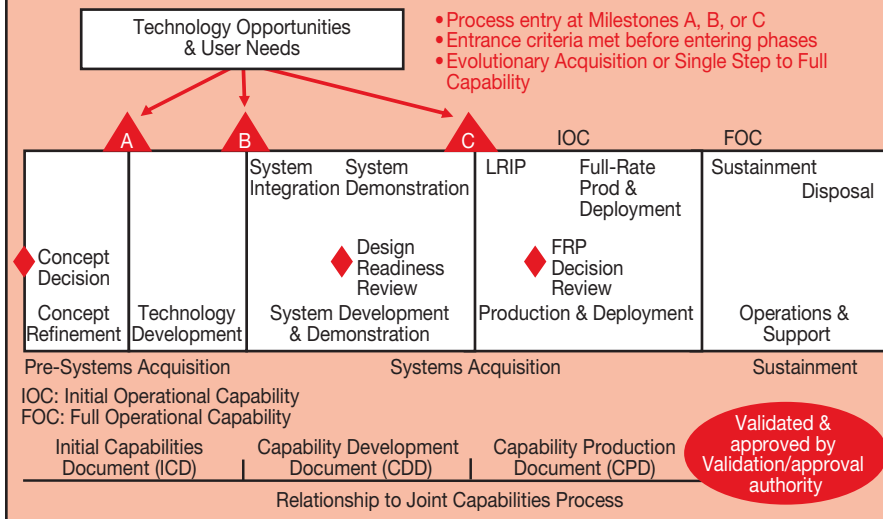
Technologies available for transition usually come from either the ATD (advanced technology demonstration) process or an ACTD (advanced concept technology demonstration) program. Because technologies that are targets for transition are often not already part of the program objectives memorandum (POM) for a target acquisition program, a reduced level of documentation and oversight can sometimes leave these candidate projects at risk for successful transition. Good transition planning is, therefore, essential.

## The Role of User Evaluations

The military user evaluations have several possible outcomes in terms of recommendations: acquisition of the technology; return of the technology for further development; termination of the project; or acceptance of the residual capability provided as fully satisfying the user need without the necessity for acquisition of additional products. Because the technology must be mature enough to use in an operational environment, the technology readiness of an ACTD, expressed in terms of a technol-

**Dobbins** is SRA program manager for innovation and technology insertion in SRA International's AT&L Office of Innovation and Technology Integration. He holds a doctorate in the management of science, technology and innovation from George Washington University, Washington, D.C.

**FIGURE 1. Acquisition Model Based on the Revised DoD 5000 Process**



sight, planning and milestone reviews, and measures of performance typically not found in the laboratory environment. The overall acquisition process is governed by policy issued from the USD(AT&L). Figure 1 shows the present acquisition model based on the revised DoD 5000 process.

### Transition Strategy

An important component of good transition planning is a documented transition strategy that addresses a number of issues to the extent they are relevant to the particular technology, including but not necessarily limited to:

- Intended use of the technology
- Operational capability elements supported
- Concept of operations
- Key stakeholder identification and involvement
- Initial cost estimates
- Modeling and simulation requirements
- Residuals use plan
- Planned acquisition phase insertion point
- Convergence of the ACTD transition strategy and the acquisition strategy
- Contracting strategy
- Percent of COTS, if any.

ogy readiness level (TRL), must be at the high end of the TRL scale.

ACTDs are reviewed by both the Office of the Secretary of Defense (OSD) and the Joint Requirements Oversight Council (JROC), and they are funded in part with OSD funds. The deputy under secretary of defense for advanced systems and concepts (USD(AS&C)) is responsible for the selection and approval of ACTDs. ACTD management planning includes designing for producibility, developing requirements for sustainment, and transition planning.

### What is Technology Transition Initiative?

Technology Transition Initiative (TTI) is a new program, created in FY2002 and included for the first time in the FY2003 National Defense Authorization Act. TTI provides limited funding for selected technology transition projects. The technology may be an ACTD but can be any mature technology needed by the warfighter. An ACTD that executes according to a good management plan will usually transition without the help of TTI funds. The objective of TTI is to accelerate transition of new technologies into acquisition so they can become an operational military capability. The technologies selected for TTI funding are chosen from a set of proposals submitted by the Services. The TTI program supplements, but does not replace, existing Service and defense agency funding. A primary goal of the TTI program is to help bridge the 18- to 24-month gap between the completion of user evaluation of a technology and the time when it can be funded as part of an acquisition program—a period that is sometimes referred to as the “valley of death.”

### Transition of Technology to Acquisition Programs

Technology transition into acquisition requires planning beyond that required for initial technology development. Acquisition programs involve a significant level of over-

### The Transition Plan

Although there is no policy or other requirement specifying the contents of an ACTD transition plan, it should address elements specific to the technology being transitioned and how the technology will merge into the acquisition process of an existing program or how it will transition as a new-start program. The transition plan should be an element of the overall ACTD management plan and should reflect the transition strategy. It should specifically address the transition issues and elements relevant to the specific technology being transitioned, including planning for operational user evaluation.

### Requirements Development

Although there is no policy requiring a formal statement of operational requirements for an ACTD, the transition manager should work with the user community identified as the evaluator of the ACTD to formulate a joint statement of operational need and understanding of the intended capability of the ACTD, including the various operational environments. ACTDs are often initiated based on broad statements of user need. However, when made a part of an acquisition program, the statement of requirements will be consistent with the new CJCSI 3170.01, signed and released in FY2003. These documents codify the requirements development process for acquisition programs.



## Transition Integrated Product Team

Part of an effective transition plan and transition management process is the formation—often by the ACTD demonstration manager—and activation of the transition integrated product team (TIPT). The TIPT provides the most natural means for bringing the key stakeholders together to review strategies, serves as a bridge between the initial ACTD management planning activity and the transition decisions, assists in identifying and resolving transition issues, and coordinates other transition planning activity. The receiving acquisition program office should be represented on the TIPT, as should contractors where appropriate.

## Overarching IPT

As the time for completion of the ACTD approaches, an overarching integrated product team (OIPT) should be formed as a successor to the TIPT. The OIPT completes the remainder of the transition reviews (cost, schedule, and performance) in preparation for transition to acquisition. The OIPT ensures that all of the necessary elements and documentation are in place for the ACTD to transition into the acquisition program at the appropriate point in the acquisition life cycle. The OIPT will also prepare for a formal program review by the defense acquisition executive.

## Understanding the Technology Readiness Level

One of the elements of the technology transition plan should be a description of the TRL of the program and how the product meets the criteria for the identified TRL. The pertinent TRL hierarchy for ACTD transition is as follows:

- TRL 6: System/subsystem model or prototype demonstration in a relevant environment (ground or space)
- TRL 7: System prototype demonstration in an operational environment
- TRL 8: Actual system completed and operationally qualified through test and demonstration (ground or space)
- TRL 9: Actual system operationally proven through successful mission operations
- The TRL level of the ACTD will determine when it is ready to go to the field for evaluation and where in the acquisition process it can be inserted.

## Acquisition Funding

Acquisition funding availability is a critical element of success. Although science and technology (S&T) funding is multi-year, procurement funding is single-year. Elements of an acquisition program have to be factored into the POM process and planned for in advance, and the resultant appropriation has to include the requested technology. If a smooth transition of an ACTD into acquisition, including the availability of funds, was not fully planned, the ACTD can be overcome by other demands on the budget from other acquisition program elements whose need

is more evident and immediate. To alleviate the “valley of death” situation, the TTI program was initiated. Accomplishing the activities necessary for the ACTD to be included as an acceptable TTI program, if appropriate, is another duty of the OIPT.

## Contracting Strategy

When a technology transitions into acquisition, there will be some form of contracting activity involved. The technology may be inserted into an existing contract whose terms and conditions will apply to the new technology; it may enter acquisition as a major upgrade to an existing system and may require a separate contracting effort; it may also enter acquisition as a new program, in which case there will clearly be a new contracting effort. This transition process can be made much easier if the OIPT works with the acquisition community to ensure that a proper contracting strategy for the new technology is in place and that the contracting strategy makes sense for the particular technology and for the existing acquisition program. There are many different contracting strategies, and having a liaison with the acquisition manager for the program into which the technology will transition will significantly ease the transition process.

## Transition Milestone Events

As part of the ACTD management and transition planning, a schedule should be developed and executed to reflect critical milestone events for the developing technology as it progresses from a lab environment to a transition event. These critical milestone events should include regularly scheduled technical and management reviews whose purposes are to give the manager insight on how successfully the program is progressing toward transition. Each of the reviews should, wherever feasible, be supported by quantitative data, and each should have exit criteria to help determine if the technology is ready to proceed to the next phase. Typical reviews should include:

### FIGURE 2. Milestone B Requirements

- Requires an approved capability development document (CDD)\*
- A PM has been assigned
- MDA approves:
  - Acquisition decision memorandum
  - Entry to system development and demonstration phase
  - Program initiation
  - Acquisition strategy
  - Acquisition program baseline
  - LRIP quantities
  - Exit criteria for next phase

\*ORD is required until CJCSI 3170.01 is revised

- Technical reviews
- Cost reviews
- Performance reviews
- Baseline document reviews
- Risk management reviews.

### **Critical Elements of the Management Plan**

The management plans for ACTD development and transition should include a number of elements or sub-plans that can significantly ease the overall process. These sub-plans are considered critical to successful acquisition programs. This should not be taken to mean that the same level of formality required for a full acquisition program is necessary. However, to ignore the value such reviews can provide—however informally they may be conducted—would not be wise. The sub-plans include:

- Supportability and sustainment management plan
- Risk management plan
- Configuration management plan
- Product test plans
- Product improvement and maturation plan
- Training plans.

### **Military User Test and Evaluation**

Field use is a critical end-state activity of the ACTD transition process. Well in advance of the actual scheduled time for operational field use and evaluation, the transition manager should identify the operational users who will evaluate the product or products. To the extent possible, representatives should be included as members of the TIPT. The contractor or lab that is producing the evaluation units should also be involved in these discussions since the number of units required as residual units to be left in the field must be determined sufficiently in advance that time is allowed for their production.

### **Military User Assessment (MUA)**

User feedback reports following test and evaluation, are critical to the final steps of transition to acquisition. A primary purpose of the user evaluation is to determine whether the system is of military value, and if it is, to provide a description of that value. Some of the elements that should be requested as part of the feedback report are:

- Importance to overall warfighting capability
- Effectiveness and suitability assessment and measures
- Operational value of residual system
- Predicted results versus observed results.

### **Defense Acquisition Executive Review**

As the technology is prepared for insertion into acquisition, the program will be subject to a defense acquisition executive review. This is a high-level review that focuses on a few key issues to make sure all the essential elements for OSD and congressional support for the system

are in place. Some of the primary areas of interest are as follows:

- Dual-use identifications
- International identifications
- Joint program identifications
- Lead Service identification
- Transition PEO identification
- Actual acquisition insertion point and TRL
- Transition target program identification
  - target program info–name, Service, acquisition PM
  - funding resolutions completed.

The identification of the actual technology insertion point is sometimes a complex issue; the transition manager should have a good understanding of what may have been happening in the acquisition target program prior to insertion. Each milestone insertion point has certain requirements, including documentation requirements. Figure 2 shows, as an example, what is necessary for entry into a program at Milestone B.

### **Are Metrics Necessary?**

Yes, metrics are critical, and they are an often-overlooked part of the ACTD development and transition process. It is difficult to manage any part of the process successfully without some level of quantitative data to assist the managers and technical personnel in determining the correct status of the project. Without good data, it is impossible for managers to plan future milestones for the program. Predictive assessments are only guesswork without good metrics information to support them. Some basic metrics that should be captured for almost any program are:

- Effectiveness
- Suitability
- Cost
- Schedule
- Quality
- Reliability
- Producibility
- Supportability.

### **Bottom Line**

In summary we can say that good transition planning requires involvement and coordination among several people, establishment of IPTs, and the use of proper metrics; and while not always easy, it is critical to the success of technology transition.

**Editor's note:** The author welcomes comments and questions. He can be reached at [james.dobbins.ctr@osd.mil](mailto:james.dobbins.ctr@osd.mil).

# Through the Eyes of a College Intern

## A Summer Hire's First DoD Experience Provides Valuable Insights

*Rachel Schwarz*

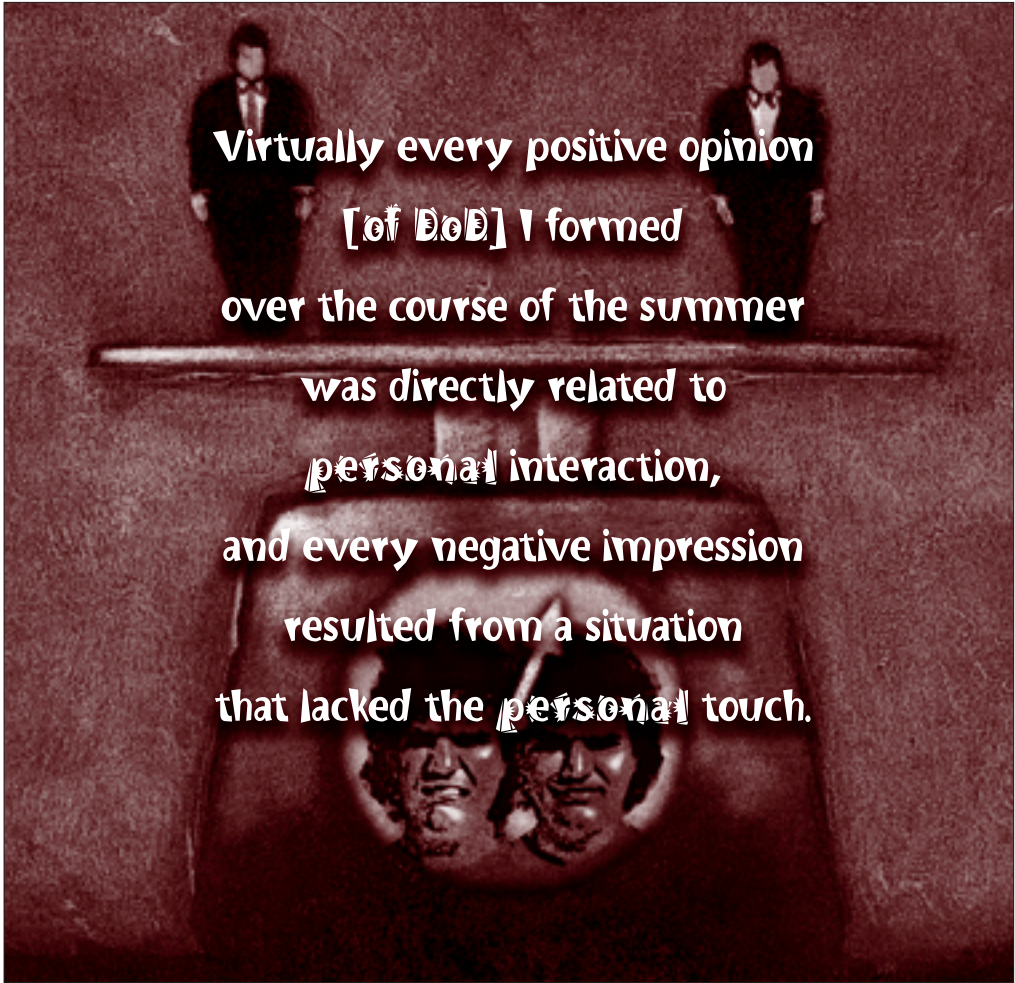
**A** “real” job—yuck! I like to work hard, especially when it comes to sports, hobbies, and going for the gusto. But throughout my young adult life, I never thought—really thought—the day would come when I would have to find a “real” job. Lucky for me, it still hasn’t, but with my graduation date quickly approaching, I decided there was no better time than the 2003 summer vacation to obtain real world experience. Deploying my best energies and working all the angles I could, I landed a summer internship in the Office of the Secretary of Defense (OSD) working with acquisition education, training and career development (AET&CD) and the Acquisition Workforce Personnel Demonstration Project (AcqDemo).

### The Personal Touch

As a young college student, I represent the demographic that is currently one of the government’s primary hiring targets. Young adults are vital to the future plans of the United States because in the next few years, a massive number of DoD employees will segue into the golden years of retirement. Acknowledging the potential human capital crisis, the Department of Defense (DoD) is actively working to attract talented young adults to govern-

ment jobs through branding and marketing the AT&L workforce.

My experience tells me that by focusing too much on the mechanics and packaging of recruitment, the government risks completely overlooking the aspect that should be the heart of recruitment and retention: the basic concept of personal interaction with the young. In many ways, my experience over the summer is testimony to the effectiveness of the AT&L workforce recruitment and retention effort, and an example of how personal interaction can make a positive difference.



**Virtually every positive opinion  
[of DoD] I formed  
over the course of the summer  
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personal interaction,  
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that lacked the personal touch.**

*Schwarz worked for the Acquisition Workforce and Career Management Office while on summer break from Baylor University, where she is currently in her junior year pursuing a bachelor's degree in business.*



My summer employment with the OSD was composed of a wide spectrum of experiences, a few of which stand out in my mind. Why did these experiences make such an impression on me? Because they shaped my opinion of the government in general and DoD in particular. Even more telling, virtually every positive opinion I formed over the course of the summer was directly related to personal interaction, and every negative impression resulted from a situation that lacked the personal touch.

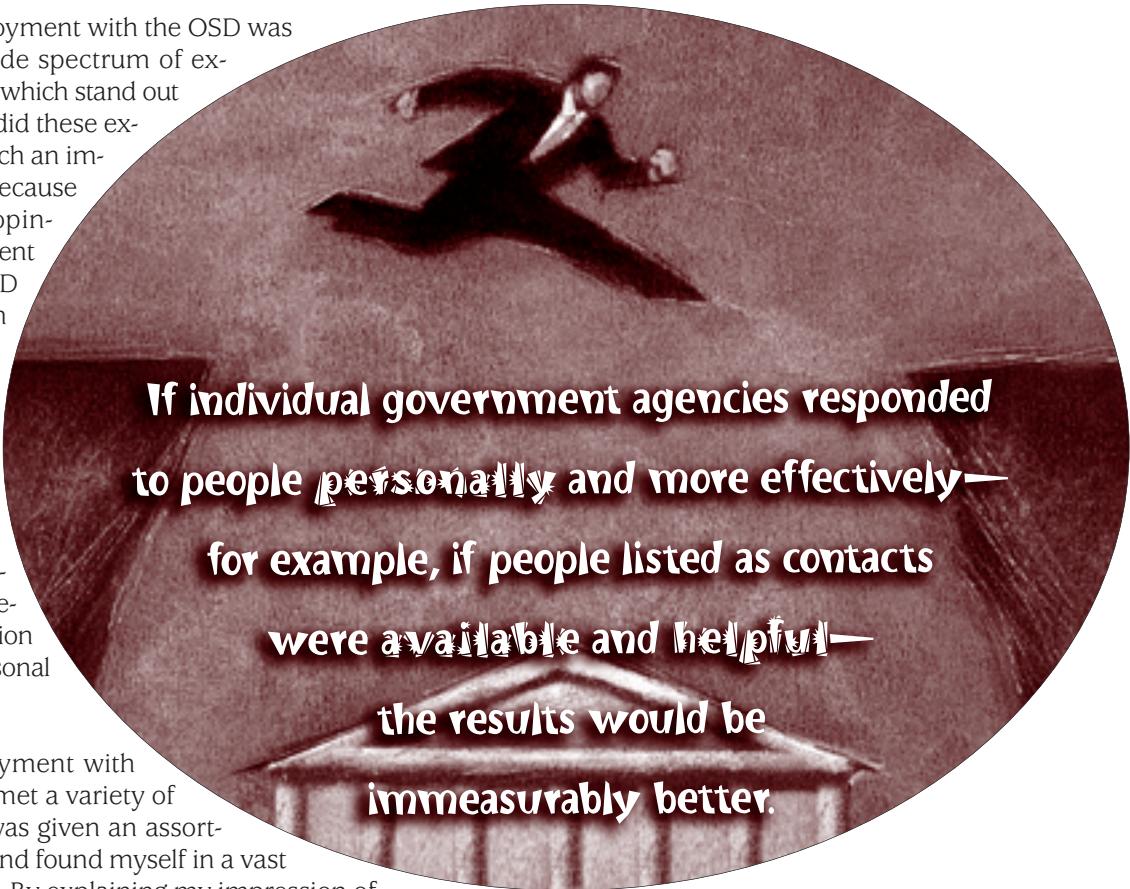
During my employment with the government I met a variety of different people, was given an assortment of projects, and found myself in a vast range of situations. By explaining my impression of these events, I provide a reasonable reflection of how thousands of other potential DoD hires may react to similar situations. I think it will also become very clear how vital personal interaction is to successful recruitment and retention.

### **You Never Have a Second Chance to Make a Good First Impression**

First impressions are fleeting, difficult to quantify, often subconscious, and they're formed within the first few minutes of interaction between two people. First impressions also apply to perceptions of an organization, the ambience of a workplace, and even the value of a job position. It's difficult to rewrite first impressions—fortunately or unfortunately, depending on whether they're good or bad. So making a good first impression is vital—and recently, making positive first impressions on prospective employees has not been one of the DoD's strengths.

### **Making the Search Easy is a Good Start**

My first impression of government job opportunities formed far earlier than the first day of my summer internship. Early in April, when I decided to look into government jobs for my summer experience, I immediately turned to the Internet for information. Getting started was easy: go to Google; type in “government jobs”; and presto, < [www.usajobs.opm.gov](http://www.usajobs.opm.gov) > shows up at the top of the list. At first I thought finding a job would be a simple process. But I quickly realized that “simple” was the wrong word;



**If individual government agencies responded to people personally and more effectively—for example, if people listed as contacts were available and helpful—the results would be immeasurably better.**

“painful” is a much more apt descriptor. The USAJOBS Web site made determining the requirements for each position extremely difficult. The job announcements were very hard to understand. They were long, used government jargon, and often the requirements seemed contradictory. Since I had no previous experience with government jobs, weeding through this information to identify what each job required was virtually impossible. I struggled with my Internet job search for several days, eventually applying for 10 summer internships.

**Pointer #1**—*A good starting point in the quest to hire more young people would be a more user-friendly Web site. USAJOBS would be much improved if job announcements were short and concise so that any ordinary person could take one glance and quickly identify key information.*

### **Friendly Follow-through is Vital**

A couple of weeks after I submitted my resumes, I followed up by calling the contacts listed on the job announcements. After making only a few calls, I became discouraged. Not only was it extremely difficult to reach the contacts, but the ones I did speak with were unfriendly and hurried. I decided to wait it out until they contacted me. If I had continued that strategy, I would still be waiting today. Out of the 10 positions I applied for, only two agencies responded to my applications—by indicating I had not been chosen for the position. I never heard from the other eight.

Lucky for me that I have a family member who is a long-time employee of the Department of Defense and understands the government's hiring procedures. Her internal DoD contacts were able to suggest open summer internships, and my relative coached me through the remainder of the hiring process by telling me whom I needed to call and what paperwork I needed to complete. Without her, I would have been forced to look outside the government for summer employment.

A key to attracting and hiring potential young employees is to emphasize a process where personal interaction is a high priority. The current system acts contrary to this concept.

**Pointer #2**—*If individual government agencies responded to people personally and more effectively—for example, if people listed as contacts were available and helpful—the results would be immeasurably better. Imagine the positive first impressions these agencies could make on jobseekers fresh out of college. Talented young people would begin gravitating towards government positions instead of making every effort to avoid them.*

### **Hiring Qualified Candidates is Only the Beginning**

My job search created a less than optimal first impression of government employment, but luckily, the positive experiences I had during my summer internship helped me to overlook parts of the negative beginning. The most influential of these experiences involved many of the people I met during my summer internship. The ones who stand out in my memory were not only friendly, but they also took an interest in my personal life. They asked me questions about my family, my school, my interests, and my goals. They found ways to relate to me, whether it was by telling stories about their own children who were close to my age or by relaying interesting facts about their lives that I could appreciate. As a young, shy college student in a very foreign environment, these personal interactions created moments in my day where I could be completely comfortable because I felt the people really cared about me. My only regret is that more people didn't make an effort to interact personally with me during the summer.

### **The Good Experiences Form Permanent Memories**

One particularly memorable summer experience was my first visit to the Pentagon, where I attended an AcqDemo briefing as an observer. Not only was it exciting for me to be in the Pentagon for the first time, but "important people" were going to be at the briefing. It was quite different from anything I had ever experienced, and it was very interesting for me to observe interactions among people and the dynamics in the room. After the briefing, very few of the "important people" had time to speak to

me, and if they did it was only a quick introduction. This was perfectly understandable. They were all very busy people and had little extra time to do anything, let alone spend time talking to a summer hire.

But one of those busy, important people did talk to me and he made me feel like a million dollars. Claude M. Bolton, the assistant secretary of the army (acquisition, logistics and technology), spent 10 or 15 minutes talking to me about my life and sharing stories about his children, wife, and hometown. After our conversation, I remember being eager to learn more and do a better job. Bolton had inspired me with the possibility of someday having a job and an opportunity to work in an environment with people like him.

**Pointer #3**—*Speaking to Bolton for a few minutes made a lasting impression on me. That same lasting impression could be made on all summer hires and interns if government employees at every level of the organization made a priority of talking to them, making a personal connection. It's a small investment of time that could have a large future return in influencing young people to begin their careers with the Defense Department.*

### **Meaningful, Achievable Work is a Necessity**

If visiting the Pentagon for the first time was my most memorable experience of the summer, number two on my list was the first time I completed a work project. A couple of weeks into my internship, just when I was beginning to get the hang of working, the deputy program manager for the AcqDemo, Mary Thomas, put me in charge of a project. She asked me to gather information from project employees and create a work breakdown structure that aligned every program office employee's tasks to the AcqDemo mission.

At first I was overwhelmed by the breakdown project. I didn't even know where to start. But with help from Thomas, I was able to structure the project. I spent hours gathering information from project employees and consolidating it into a document that met project requirements. When an interim version of the work breakdown was complete, Thomas asked me to present it to all the program office employees at an offsite department meeting. The objective of the presentation was to prompt further discussion and suggestions for improvement of the work breakdown. When the day came for my presentation, I was a little nervous, but everything went smoothly, and our discussion on the work breakdown was a success. As the offsite wrapped up at the end of the day, everyone in the project office was very pleased with my project and presentation. I received a number of compliments on the quality and organization of my project and my confidence in speaking to a small audience. I felt that I had done something worthwhile and a good job. Yessss!



Using the information and input I received from AcqDemo employees during the offsite discussion, I was able to revise and improve the work breakdown. Once the updated version of the breakdown was complete, the project was ready for phase two: briefing my boss, Ric Sylvester. When I entered Sylvester's office I probably looked nervous, but I quickly realized there was nothing to be worried about. He was nice. To lighten the mood and make me feel more comfortable, Sylvester began talking to me about my school. Once I started to feel more relaxed, I was able to present the AcqDemo work breakdown effectively, and when my meeting wrapped up an hour later, I had an overwhelming feeling of accomplishment. The breakdown showed how the AcqDemo was working to accomplish the overall mission, and it was going to serve as a valuable justification tool for the AcqDemo in the future. I had completed my project successfully.

Doing this project was 10 times more valuable than many of the other projects I was assigned during my internship—things like changing data on a spreadsheet and throwing out dated reports. Although those other tasks helped the office, they were not made meaningful to me and did not provide me any additional experience that would help prepare me for the future.

**Pointer #4**—*Interns can't expect to get only important projects, but even if the job assigned is just updating a spreadsheet, it's vital that someone explain the context and significance of the task, putting it into the broader perspective of the organization—otherwise the job will be perceived as make-work and of no real value.*

There's always a risk involved with entrusting an inexperienced person with a project that's vital to an agency's mission, but the danger can be far outweighed by the benefits both the agency and the intern gain from the experience. By taking time to mentor, guide, and personally interact with summer hires, superiors

can help them succeed. The net result is beneficial in the short and long term. The agency makes effective use of resources by having the summer hires contribute in a meaningful way. And the young employees not only build their confidence, but also gain experience completing important work, making them more competitive job candidates and more valuable employees in the future.

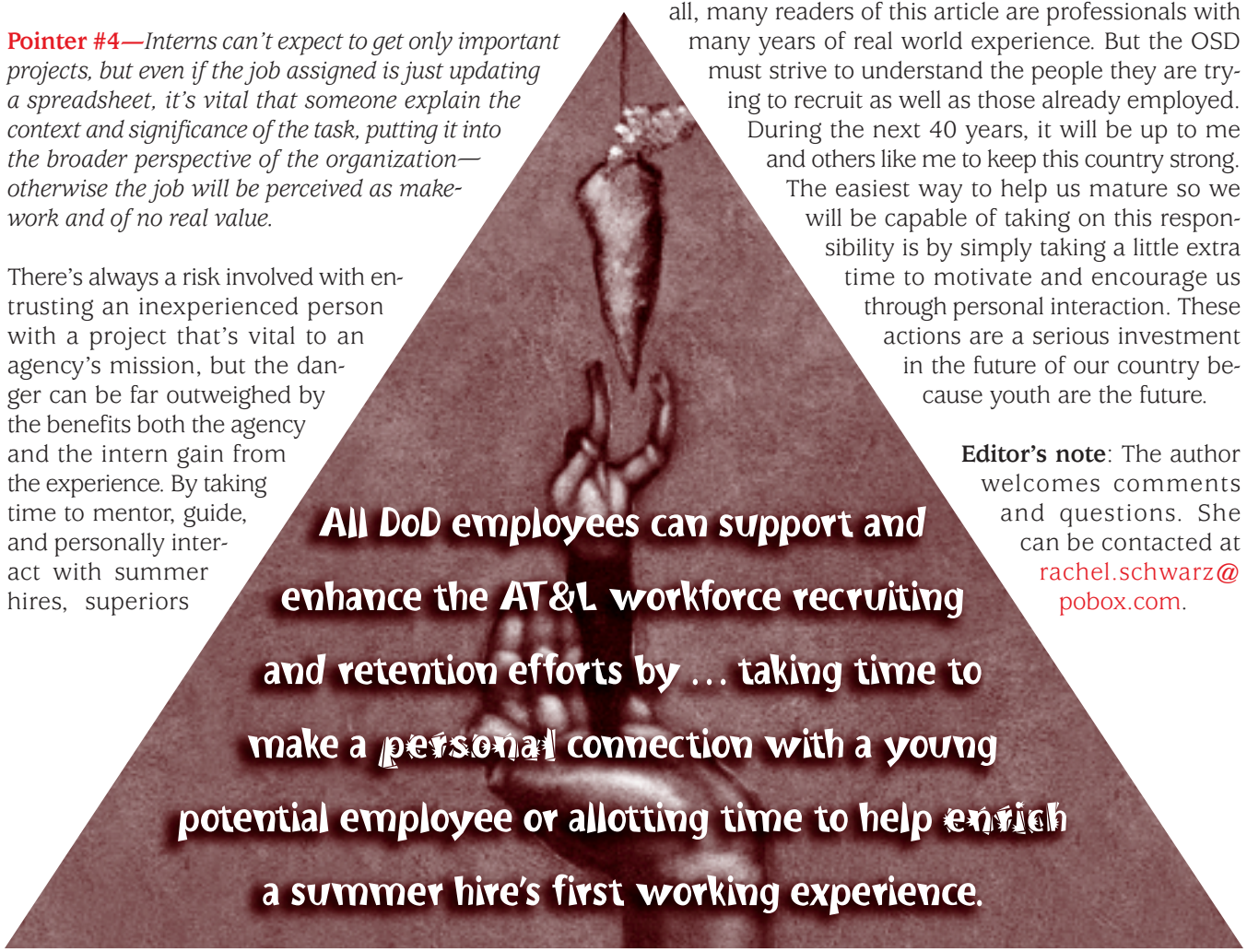
### **One Good Impression Can Influence a Thousand**

Internships can provide summer hires with a vast amount of experience they can use to springboard into future careers. But that's not all. By doing everything possible to create positive experiences for these young workers, the government will be much closer to achieving future recruiting and retention goals.

**Pointer #5**—*All DoD employees can support and enhance the AT&L workforce recruiting and retention efforts by realizing the importance of taking time to make a personal connection with a young potential employee or allotting time to help enrich a summer hire's first working experience.*

I realize there's a possibility that the opinions of a young 20 year-old college student will be viewed as naïve. After all, many readers of this article are professionals with many years of real world experience. But the OSD must strive to understand the people they are trying to recruit as well as those already employed. During the next 40 years, it will be up to me and others like me to keep this country strong. The easiest way to help us mature so we will be capable of taking on this responsibility is by simply taking a little extra time to motivate and encourage us through personal interaction. These actions are a serious investment in the future of our country because youth are the future.

**Editor's note:** The author welcomes comments and questions. She can be contacted at [rachel.schwarz@pobox.com](mailto:rachel.schwarz@pobox.com).



**All DoD employees can support and enhance the AT&L workforce recruiting and retention efforts by ... taking time to make a personal connection with a young potential employee or allotting time to help enrich a summer hire's first working experience.**



# Managing a Product Development Team: Part I

Larry Barrett • Ken Lehtonen

**O**rbiting 380 miles above the earth, NASA's Hubble Space Telescope (HST) has returned a wealth of scientific data about our universe and galaxies beyond, highlighted by spectacular images of the birth and death of stars, colliding galaxies, and other extra-terrestrial events.

Despite its tremendous success for almost two decades, the HST ground support system experienced down-to-earth problems—namely budgetary ones—prior to the turn of the 21st century. To keep HST operating efficiently to 2012 and beyond, the Vision 2000 project was conceived with the primary goal of substantially reducing the costs of operating and maintaining the spacecraft ground systems. Taking advantage of this atypical management opportunity, a set of product development teams (PDTs) was established and given the charter to re-engineer the ground system and by so doing, reduce the remaining life-of-mission operating and maintenance costs while providing improved reliability and increased capabilities.

One of those PDTs, the Control Center System (CCS) PDT, was charged with developing and deploying the system that is still responsible for the overall health and safety of the HST vehicle by sending commands to the HST vehicle for scientific data acquisition, acquiring real-time engineering telemetry data, and providing accurate and timely problem diagnosis. This article discusses the overall management of the CCS PDT as it struggled to embrace a brave new world of leading-edge technologies and to successfully advance a new management culture, and it focuses on several of the more successful techniques and strategies that ultimately ensured the success of this team.



CCS Integration Environment ("The Triangle").

NASA CCS photograph

## Establishing Technical Goals

The major technical goals established for the PDT were:

- To challenge the old ways of doing business and apply new technologies where appropriate
- To build a system that, within a distributed but scalable architecture, combined reused legacy applications (e.g., HST-specific algorithms), commercial off-the-shelf (COTS) products, government off-the-shelf (GOTS) products; and leveraged evolving technologies
- To design an evolutionary and maintainable system
- To execute a development strategy for incremental releases to ensure that the HST operations staff and systems engineers could gain early operations experience, thus giving the development staff time to clarify requirements early in the process
- To become an innovative leader in developing control center systems for NASA-Goddard.

Those goals became the major guideposts for evaluating how the PDT was grown, how it was managed, and

**Barrett** is the chief systems engineer for the HST control center system. He is primarily responsible for system architecture oversight and technical risk management. **Lehtonen** has over 35 years of experience in software engineering. His experience includes designing, implementing, testing, and managing a wide variety of mission software applications for NASA.

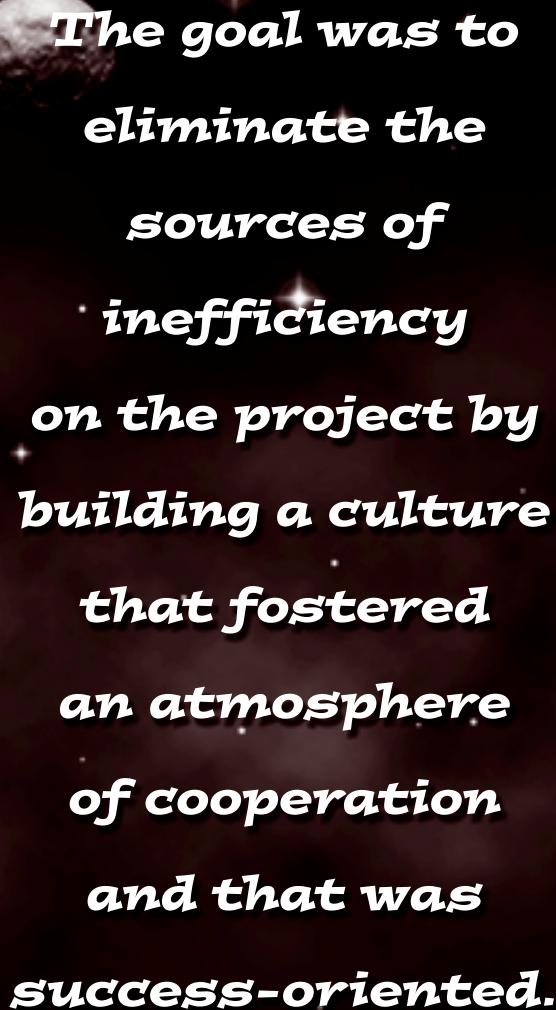
how the technical decision-making process, which is always required during the course of a system development project, was optimized.

### **Looking for Challenges**

The HST project team, located at Goddard Space Flight Center in Greenbelt, Md., was responsible for funding the Vision 2000 initiative. The team made it clear from the outset that they were looking for “new and better ways of doing business,” even if this meant re-engineering the existing ground system and totally replacing it with a new system based on advanced and potentially unproven technologies.

A second challenge was the aggressive schedule dictated for this project. It was essential that the new Hubble control center system be fully operational at least one year before the third HST servicing mission scheduled for December 1999. In addition, senior HST management wanted the first major release of the CCS to “shadow” the second HST servicing mission scheduled for February 1997! So beginning in December 1995 with an intense proof of concept demonstration and culminating with the CCS architecture specification in April 1996, it would be necessary to deliver a fully operational system within three years and the shadow CCS within 10 months. (The existing ground system had taken over five years to develop.) This objective drove the delivery of six major software releases within the first year (Figure 1).

An additional challenge to the management of the PDT was the decision to use—initially—the legacy software maintenance team who, although highly trained and well versed in structured development methodologies, were not as skilled in more current system design and development technologies. In fact, the PDT was front loaded (in terms of numbers) with a technical staff that normally wouldn’t be required until after a traditional preliminary design review. An attrition rate that approached 30 percent showed the new management team that traditional



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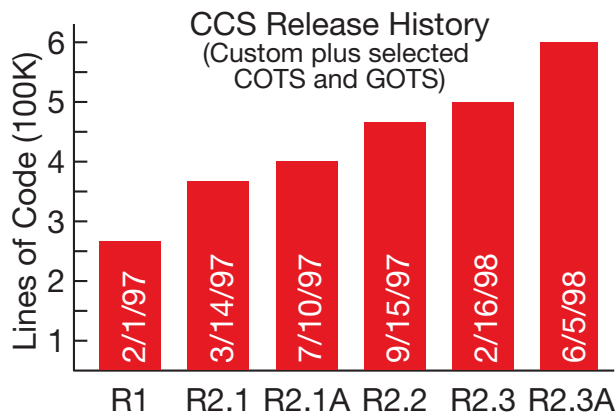
approaches weren’t going to work. One management guideline that was actively employed with good results was to utilize those management techniques that had been successfully applied to small teams or were currently being used successfully in similar re-engineering projects. The goal was to eliminate the sources of inefficiency on the project by building a culture that fostered an atmosphere of cooperation and that was success-oriented.

### **Flattening the Organization**

One of the management team’s first actions, which gradually paid big dividends, was to flatten the project organization. We established a minimal project management support staff consisting of two release managers, two quality assurance personnel, a resource scheduler, and a single administrative assistant. The remainder of the organizational structure consisted of a set of core tech-

nical teams, each with a technical lead “supervisor.” There was a significant amount of initial resistance to this “radical” approach because the traditional hierarchical management structure (“command and control”) from the legacy organization was firmly entrenched. Fortunately, the key stakeholder for the project was very supportive of this approach, and the staff quickly accepted a structure that imposed less bureaucracy.

Each of the empowered team leads was held responsible for implementing a specific subsystem within the Hubble control center. For example, there was a core team to develop the spacecraft command functions, another team to develop the graphical user interface (GUI), a middleware team, a data management team, and so on. The leads were also tasked with ensuring that their staffs were the right size, embodied the appropriate skill mix, and were properly trained. The technical decision-making process was pushed down as far as possible in order to streamline the overall development effort—remember we had very aggressive schedules to meet. To complete



**FIGURE 1: Summary of CCS Productivity**

the picture, the release managers, who were ultimately responsible for delivering the next scheduled version of the Hubble control center system, were charged with identifying the resources they needed to meet their delivery schedule. Thus, they were required to negotiate with each of the core team leads to borrow personnel to establish a release team with the right skill mix. Only if a conflict arose did the project lead intervene to clarify the priorities and/or to reallocate the resources.

As a result of this new organizational structure, team members had both an organizational “core” identity that closely matched their own technical skills and an affiliation with the delivered system release. A better designation for this new organization was “dynamic matrix,” as the free flow of information between and among teams and team members was encouraged, as was staff movement between teams when conditions warranted.

Another facet of the organization’s character was management’s tolerance for “failure” without retribution. After any significant problem was resolved, a post-mortem was conducted, and if necessary, process improvement was initiated and/or the team’s skill mix was adjusted. This approach led to a project environment that fostered the growth of personal strengths instead of punishing weaknesses. As a result, the staff became more willing to assume responsibility for making the decisions necessary to meet the aggressive schedule. Over time, a set of informal checks and balances evolved between the teams enabling continual progress, rapid decision making, and a reduction in the magnitude of corrections required.

### Communication, Communication, Communication

The CCS management team realized that a project of this size (it started out with 75 people and reached its maximum at about 150 people) and complexity required constant and effective communications, oral as well as written. We took advantage of the fact that the HST project

decided to colocate the majority of the CCS team to a nearby off-site building. Under one roof we housed the systems engineers, software developers, system testers, hardware engineers, operations personnel (small subset of HST flight operations team), quality assurance, procurement, and management personnel. This arrangement turned out to be one of the major reasons for the success of this project and will be examined in greater detail in Part II.

As with any team effort, a combination of both formal and informal communications was required. We used formal communications chiefly to inform HST stakeholders and senior management of the status of the project. Core teams and the release managers provided status estimates for their areas on a weekly basis. The CCS management team then met on a scheduled basis with the key project stakeholders and presented a consolidated status in terms of schedules, percent complete estimates, and other traditional project management reporting vehicles. Periodic formal presentations to an independent audit team were also required to ensure that all of the PDTs were progressing as planned and in unison with each other.

On an informal basis, the CCS management team implemented a series of actions that proved to be highly beneficial to overall project success. First of all, the building’s layout was leveraged to group each of the technical teams as physically close together as possible. This step enabled significant intra- and inter-team communications at the technical level as well as for the project team as a whole. As a result, it was very easy for anyone on the project to obtain a real-time status of the development process, and staff mingling was encouraged and supported by the management team. We also conducted daily 10-minute “stand-up” technical meetings led by the release manager to foster timely communications across groups. To further enhance communications during software release integration, we dedicated a portion of the building as an integration facility, dubbed “the Triangle.” Each Hubble control center core team had its own dedicated floor space and workstations. As the CCS data flows traversed through the system during a particular test, the teams were able to communicate directly and immediately with each other and to identify firsthand any interface problems that arose. This was a significant contributing factor to our on-time software deliveries.

As the project progressed, it was necessary to increase the size of the staff, especially in those technology areas where the legacy personnel were less experienced. About that time, in order to enhance our team-building activities, we began to hold biweekly summer barbecues. In turn, the core teams assumed responsibility for the theme and management of the cookout. The rationale for these social occasions was the conviction that people who got



to know each other in an informal, non-stressful setting would work together much more effectively during the stressful software system integration period. This reasoning proved to be correct: the traditional finger-pointing associated with system interface testing was virtually non-existent within the PDT.

It's also important to note that as project lead, author Lehtonen conducted frequent informal MBWA ("management by walking around") sessions. These sessions enabled him to meet firsthand all of the members of the various teams as well as to communicate the ideals for an open, inclusive project and to encourage the sharing of technical knowledge among team members. It also strengthened the goal of having an active and trusted management presence on the project.

### **An Electronic World**

We made a decision to reduce but not entirely eliminate the need for hardcopy documentation (addressing the often-heard comment that as soon as a document is published it is out of date). To that end, a couple of internal Web sites were established for the electronic distribution of key documents. We also relied heavily on e-mail. At the core of the design process, a CASE (computer-aided software engineering) tool was established to store our Object Management Technology (OMT) design information electronically and to generate hardcopy design documents for walkthroughs. This electronic repository was not only very effective in streamlining the documentation of the development process, but it also remained a key engineering component during the transition from the purely development project to the current sustaining engineering environment.

In effect, what we accomplished was to embed an effective information management environment within the project. By carefully selecting and tailoring the right tools and processes, we were able to enhance technical communication significantly and meet the information needs of the project. Because of this tailoring, we had at our fingertips the necessary information to facilitate decision-making processes, making for quick analysis of alternatives and timely selection, which kept the team moving forward at all times.

*In Part Two of this article (Defense AT&L May-June), the authors explore some of the challenges of building a cohesive, synergistic team, and conclude the article with a list of "implementation strategies" that were used successfully on this project and might be helpful for readers' projects.*

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## *Office of Force Transformation Unveils Primer on* **Network-Centric Warfare** **(Jan. 7, 2004)**



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# The Definitive Cost Elements of Subpar Quality in the Navy

## The ALRE Flight Safe Program

Mark Gindele

**“Y**ou’ll put a plane in the water,” says Rich Headley, head of the Navy’s Aircraft Launch and Recovery Equipment (ALRE) manufacturing department in Lakehurst, N.J. It’s a statement he makes frequently. “Putting a plane in the water” is one of those phrases that gets attention from a lot of folks. Kind of on the same level as screaming “Fire!” in a movie theatre or crying “Wolf!” while on a camping trip. Sometimes you have to put it in language that everyone understands. And around Naval Air Command (NAVAIR), at least today, everyone understands Headley’s “Code Blue” call.

What Headley is referring to is the absolute minimum requirement for making parts. But not just any parts. Parts that, when manufactured incorrectly or installed improperly, can fail and have a catastrophic result. Parts that can put a plane in the water, kill people, or destroy airplanes—and cost the Navy millions of dollars. In this arena, Headley sees himself as the “sheriff of quality” with the authority to halt catapult and arresting operations on ships rather than risk Navy resources. (Catapult and arresting equipment encompasses everything necessary to get the aircraft off and then back on ships.) Needless to say, Headley takes his job very seriously.

### Flight Safe Program Implemented

Several years ago, during the 2000 timeframe, the quality personnel at NAVAIR Lakehurst began observing an increase in the number of defective parts over the average number of observed defects from prior years. More alarmingly, the defects were in the critical features of the parts rather than minor areas. When critical and major features of parts are non-conforming, it greatly increases the risk that the part will fail during normal operations and directly cause a disastrous event. The NAVAIR engineering department, led by George DiBiase, believed that it was only a matter of time before these material defects translated into catastrophic fleet accidents.

NAVAIR teamed with the Navy’s supply sources and changed the way critical parts are purchased and managed for the ALRE program. Initially, a memorandum of agreement was signed to establish and maintain requisite source approval requirements, quality provisions, and technical data requirements. Following this, another agreement solidified the tracking and certifying of critical components.

The program was named “Flight Safe,” building on the popular Navy SUBSAFE program. However the Flight Safe program does not incorporate every feature of the SUBSAFE program. By selectively identifying those features that offer the most economical return for the investment in light of the ALRE-capable fleet and that support infrastructure, the Flight Safe team arrived at an optimum mix.

One of the most common questions put to the Flight Safe team is, “What does it cost?” (Of course, it’s the people who don’t actually use the ALRE equipment who usually

**When a part is not conforming to the specification—a “poor quality” item—there likely will be an adverse ripple effect through the supply chain, impacting all stakeholders of the part.**

*Gindele teaches quality and manufacturing for Bucks County Community College, Newtown, Pa. He is currently developing a model to escalate acquisition cost to total life cycle cost for best value analysis. Gindele is a certified cost estimator and analyst.*

ask. The people who land on aircraft carriers assume all along that the parts are made by quality suppliers and independently inspected before installation.) Headley's response is often aimed at cost avoidance: in other words, if you don't make the part correctly, you'll lose a plane. However, he realizes that there are enormous cost ramifications associated with delivering poor quality products. In this article, we'll identify these cost elements.

### **What is Quality Anyway?**

That question will receive a multiplicity of responses. In the consumer business world, quality is the ingredient that helps to differentiate one product over another. Modern business teaching emphasizes satisfying customers' needs, whether real or perceived, in order to win more customers. Another dimension is that as quality increases, costs will decrease—a direct result of higher sales and of reduced rework, scrap, and warranty claims.

Products with more features or better ingredients are often called "higher-quality" items. Name branded items like Bayer or Coca-Cola® are often perceived to be of better quality than generic products.

Another definition for quality is manufacturing-based, and this is the basis for the Flight Safe program. Manufacturing-based quality implies that the product conforms to the specification documentation.

This article illustrates that the best approach to quality should be a systems approach. When a part is not conforming to the specification—a "poor-quality" item—there

likely will be an adverse ripple effect through the supply chain, impacting all stakeholders of the part. Conversely, a "high-quality" part will have a positive effect on the same supply chain.

Recognizing that poor quality transcends more than the bottom line cost, cost estimates are often used as a common denominator to compare one alternative to another. Quality-impacting elements are translated, therefore, to their cost impact. The results demonstrate that total system costs will be at the lowest level when high-quality products are deployed. For the Navy example, cost is inversely correlated to quality.

### **An Example: The Water Cooled Module and Panel Assembly**

Jet blast deflectors (JBDs) are installed directly aft of the catapults on aircraft carrier ships. They function to divert the heat from the jet engines to above the deck, where it is dissipated in the atmosphere. Without this important system, the launching aircraft engine exhaust would pose a hazard to personnel, equipment, and aircraft. When the JBDs are not directing the heat upward, they are lowered into and become an integral part of the flight deck. On the surface area of the JBD facing the jet engine, water-cooled modules are installed. These modules are reinforced, ribbed-based structures that are connected to cooling salt water inlet and outlet piping (Figure 1).

Each water module has hollowed tubes inside that allow for the flow of saltwater from the inlet to outlet ports. Continuously circulated water through the module allows for

With ignited afterburner and loaded with ordnance, an F-14 Tomcat from the "Checkmates" of Fighter Squadron Two One One (VF 211) prepares for launch off the deck of USS John C. Stennis (CVN 74). The JBD is elevated and the 42 modules (Figure 1) are transferring the heat.

U.S. Navy photo by Photographer's Mate 3rd Class Troy M. Latham





the transfer of heat from the jet engine to the water and serves to protect the other airplanes on deck as well as the deck personnel from extreme temperature effects. Without the water modules, the heat from the engines would warp and deform the JBD panel and prevent the repeatable cycling of launching aircraft.

Flight operations at sea on Navy aircraft carriers require many tasks to be performed perfectly by many different people. Anyone who has had the opportunity to witness Navy flight operations on a carrier can attest to the almost indefinable number of possibilities for the smallest mistakes to lead to catastrophic accidents. (The fact that Navy personnel accept this high-stress environment as routine and complement their work procedures with a zero accident mentality is worth noting and commending.)

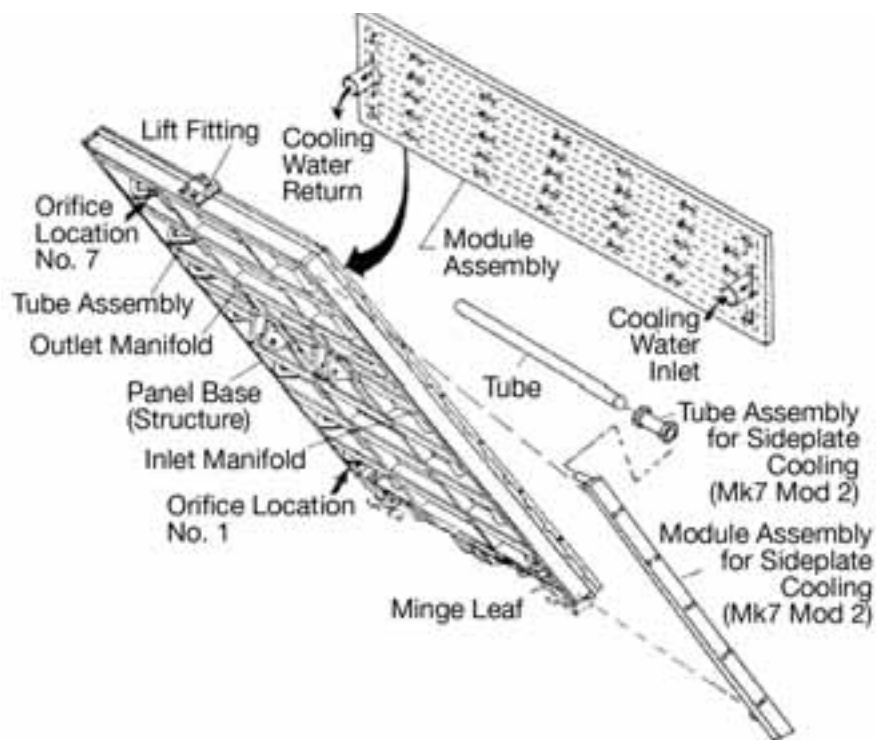
Consider, for example, that anyone on or below deck has the authority to suspend flight operations without clearing it with his or her chain of command. The proper authorities carefully review “foul deck” (a flight deck that is not ready for landings) decisions later, but in the meantime, operations have been halted. And the criteria for stopping at-sea operations are by no means perfectly defined, especially in the aircraft launch and recovery environment.

“What do you mean my catapult is down,” the air boss asks the catapult maintenance officer after being summoned to the carrier control tower, O-10 deck. While the conversation remains professional, it is by no means friendly or collegial.

“The JBD modules are spraying salt water all over the aircraft,” explains the bos’n. “And several modules show cracked and flaking hard coat surfaces. The F414-GE-400 turbofan engines, the F404-GE-402 enhanced performance turbofan engines on the Hornets, and the Tomcat’s F110-GE-400 engines don’t do real well with FOD [foreign object damage]. I have to take down the catapult and fix the modules.”

After short discussions involving trading-off operations—perhaps moving the jets to a different catapult and moving the “props” to the leaking module catapult—the two reach agreement on a maintenance schedule. First the bos’n estimates manpower and time required to perform the emergency repairs, then the air boss checks schedules to find the optimum time. It is not surprising to get the 3 a.m. to 5 a.m. time slot “again.”

**FIGURE 1. Water-cooled Module and Panel Assembly**



The V-2 division on a carrier, the group responsible for maintaining and operating the ALRE equipment, has the task of keeping the equipment in an operational-ready status. As aircraft have increased in speed, weight, complexity, and expense over the past 50 years, the ALRE equipment, by some calculations, has approached its design limitations. In order to maintain safe operations with regard to launching and arresting aircraft, the equipment used by the fleet must, therefore, be manufactured to the exact engineering specifications and maintained accordingly. Typical production variances often permitted in other manufactured parts are frequently grounds for rejection in ALRE.

To perform this ALRE function, the V-2 crew has a busy schedule assuring that all systems are operational. Most of the duties are routine, with little room for unscheduled efforts. So when a piece of equipment breaks, necessitating immediate repair, the assignment is added to an already full work day. Long days become longer. If unscheduled maintenance can be avoided, steps are taken to do so.

### Replacement Philosophy

One of the most common unscheduled maintenance avoidance techniques practiced by the ALRE community is to replace an item before it fails. This makes perfect sense. The maintenance cycle is akin to replacing your tires on your car before you have a blowout at high speed. A tire failure while driving will not only require you to replace the tire, it may lead to a chain of events ultimately culminating in loss of control of the vehicle, major dam-

age, and injury or death to the occupants. Replacing worn parts just prior to the failure point allows you to maximize benefit from the installed part and avoid other, unscheduled costs.

Consumers generally buy tires that are rated for wear by the mileage metric. Under typical driving conditions, consumers expect to get close to the mileage rating for their tires. If you buy tires that are rated for 50,000 miles, you don't expect to replace those tires until your odometer crosses 50,000 miles. This same maintenance ideologue should apply to the Navy. A part should be used to its full design life. As in the civilian world, this would maximize benefit from the part and minimize cost to the program. However, for several reasons, this is not the case.

Our JBD water module is a case in point. While the part is designed to last five years, the Navy replaces it, on average, at a rate 3.8 times higher—the equivalent of buying tires rated at 50,000 miles and replacing them at 14,000 miles. That just doesn't make good economic sense.

In the case of the module, there are underlying reasons why they are replaced more frequently. These reasons, both real and perceived, drive the costs to much higher levels than warranted. When all the costs—acquisition, maintenance, and secondary and tertiary costs—are considered, the Navy is paying a bill that is truly unnecessary. The Flight Safe program is correcting this supply chain anomaly.

**Inefficient Cost Drivers**

JBD modules are procured by the supply system and kept in storage for normal use and replenishment. The supply system collects usage data from the ships, consolidates the information, and issues timely procurements to replenish stock. During the ALRE audit, several maintenance personnel cited the poor quality of the JBD modules provided by the supply system.

During a three-year period, there were nine product quality deficiency reports (PQDR) issued against one supplier of the modules. (These reports are prepared by users of the equipment and identify problems.) Leaking modules, cracks, poor welds, twisted surfaces (that should be flat), debris left inside, and other dimensional non-conformances were cited. Yet all products had passed the contractor's quality system and were approved for payment by the local government inspectors and administrators. In one case, 98 percent of a single lot of 50 modules from the ven-

**If the Navy were to embark on a study of the true total cost of its systems, then quality standards would become evident as cost-saving drivers.**

dor were rejected for fleet use. Had these not been receipt-inspected per the newly established Flight Safe program prior to delivery to the Navy's storage warehouse, they would have been delivered and installed on ships.

Before deploying, a ship is provided with a coordinated shipboard allowance list (COSAL) that specifies the range and quantities of all equipment considered necessary on an extended deployment for preventative and corrective maintenance actions. What drives these allowances is historical demand. In the relatively finite ALRE community (200 members per ship and an approximate 100 percent turnover rate every four years) formal and informal networks pass on operational stories of the past from one crew to the next. For a JBD module, the COSAL is approximately 60 modules or approximately 40 percent of all in-

**FIGURE 2. Cost Savings Associated with High Quality**

	IDEAL	REALITY	SAVINGS FROM FLIGHT SAFE	% OF COST SAVINGS
ACQUISITION				
Quantity (5 YEAR)	1848	7140	5292	
Cost of Panel to Fleet (CY \$2002)	\$1,894,200	\$7,318,500	\$5,424,300	286%
Cost of rel. parts, i.e. fasteners, etc.	\$189,420	\$731,850	\$542,430	
Receipt Inspection	\$258,720	\$999,600		
FLEET EFFORT				
Total Fleet Time (hours)	37,884	146,370	108,486	
Total Cost per year	\$4,652,343	\$18,053,000	\$13,400,657	288%
Total Cost per year/ship	\$930,469	\$3,610,600	\$2,680,131	
Total Cost per unit	\$77,539	\$300,883	\$223,344	
Total Navy Cost \$ ( 5 YEAR)	\$2,518	\$2,518		
Quarterly Demand	92	357	265	

stalled modules—a relatively large amount when compared to the design life expectancy of a module, which is five years. Ideally, this COSAL number should be minimized.

During the work-ups of the JBD systems and modules, it is not unusual to find some maintenance issues. Knowing that a defective module at sea will adversely affect the operational capability of the ship (perhaps necessitating midnight maintenance), that the quality history of the part is poor, and that the COSAL inventory may be largely defective, the bos'n may recommend replacing all or many of the modules installed on the ship while the ship is pier-side. After all, better to have all the modules in close-to-perfect, as-new condition, fully checked out *before* deployment to avoid—or at least minimize—unscheduled maintenance at sea.

From an operational standpoint, the approach is ideal. From an economic viewpoint, it's the most expensive. Poor quality drives higher demand; higher demand drives cost. Performance and cost variables need not be mutually exclusive. It is possible, and attainable, to have highest quality parts equate to the lowest total cost. The philosophy of readiness at any cost needs to be replaced with a more economically balanced approach without compromise to safety.

Poor quality, as noted earlier, causes a ripple effect through the supply chain. Higher demand drives the requirement for more contracts for the parts. Higher demand drives more on-hand inventory on deploying ships. The ship has also to carry more ancillary equipment for the modules—for example, tube assemblies, locknuts, couplings, screws, nuts, clamps, and so on that are consumed when modules are replaced.

A substantial cost that often goes unnoticed to almost everyone but the ALRE sailor, is the cost of the labor to replace the modules. Under the ideal, design-life scenario, the ships would expend 37,884 hours over five years replacing modules based on an at-sea environment. In the real world, under the pre-Flight Safe conditions, the number is 146,370 hours. Ideal conditions are rarely achieved, but this difference in hours—108,486—is too great. By achieving the design-life expectancy, the acquisition cost alone on this one part could be reduced by \$5,966,730. Equivalent total Navy cost for the same five-year period could be reduced by \$13,400,657 (Figure 2).

### **Additional Costs Result from Poor Quality**

There are other costs associated with poor quality that often go overlooked. In the military planning cycle, maintenance expenses often come out of a different budget from acquisition dollars. While there have been several initiatives in the form of guidance and directives for lifecycle costs to be considered during acquisition, the real-

ity is that acquisition costs are usually the basis for awarding contracts.

### **Navy-Specific Cost Elements**

Navy-specific costs associated with maintaining higher inventories include storage space on ships; warehousing; material handling; transportation; documentation processing; rework costs; loss of use of the equipment; engineering and criminal investigations necessary to resolve responsibility for the less than desirable equipment; and additional procurements.

Working long days at sea away from family and living in a high-tempo environment make for a very stressful situation. Issues related to quality of spare parts are, for some personnel, the last straw, as evidenced by the following from a General Accounting Office report to Congress (GAO-01-587): "We recently reported that one of the six factors cited by military personnel as sources of dissatisfaction and reasons to leave the military related to work circumstances such as the lack of parts and materials to successfully complete daily job requirements."

In conclusion, the cost of quality products is definable beyond the catastrophic event. A poor-quality product in the fleet results in the Navy's incurring costs at multiples of the original acquisition cost. Conversely, high-quality parts and assemblies permit reduced cycle times for replacing parts and improve reliability.

Many recognized quality experts have written of the high cost of poor quality. Armand Feigenbaum, one of the early identifiers of the costs associated with quality, talked about the "hidden plant" to describe the part of overall work efforts that consists of searching for mistakes, audits, rework, duplication of efforts, and the performance of unnecessary tasks. W. Edward Deming called it the "buried treasure" in companies and reported these costs, collectively, to be in the range of 25 percent to 40 percent of the cost of manufacturing. However, because of the complex operating environment of the Navy, with ships being deployed far from logistics support centers, the cost to the Navy may be much higher.

Acquisition cost is often not the primary cost driver for Navy total lifecycle cost. Total cost to the Navy is at a minimum when all the parts are defect-free and fully conforming to the engineering specifications. If the Navy were to embark on a study of the true total cost of its systems, then quality standards would become evident as cost-saving drivers. Flight Safe will assure only properly made products reach the fleet.

**Editor's note:** The author welcomes comments and questions and can be contacted at [bucksprofessor@yahoo.com](mailto:bucksprofessor@yahoo.com).





# Annual Programs Review

## Theme:

**Partnership, Integration & Interoperability  
—Creating Meaningful Precision Capability**

## April 20-21, 2004

Precision Strike Association is bringing together some of the most authoritative individuals in government and industry to discuss these timely issues. PSA has invited experts from each of our military services, industry professionals, and decision makers including Michael W. Wynne, acting under secretary of defense for acquisition, technology, and logistics; Tom Burbage, Lockheed Martin executive vice president and general manager of the Joint Strike Fighter program; and Gordon England, secretary of the Navy.

## Speakers already confirmed include:

- ◆ Lt. Gen. Norton Schwartz, USAF, director for operations (J-3), Joint Staff
- ◆ Harry Schulte, vice president strike systems, Raytheon Missile Systems Company
- ◆ Retired Brig. Gen. James B. Smith, USAF, vice president, precision engagement, Raytheon Company

**Scott Hall, Howell Auditorium  
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# Corrosion Prevention and Control: Status and Update

Michael W. Wynne

Acting Under Secretary of Defense (Acquisition Technology & Logistics)

**Editor's note:** The following is excerpted and adapted from an address given by Wynne on Nov. 20, 2003, to the Tri-Service Corrosion Conference, Las Vegas, Nev.

**W**e have made a lot of progress in corrosion control in modern vehicles, which can now last about as long in my original home, humid Florida, as here in the dry desert. Technology infusion into design and manufacturing has made a difference in the products we buy and in controlling corrosion in military equipment and facilities. Although we have put a lot of emphasis on this subject in the past, what we want to do during the next year is continue this effort, embedding and incentivizing corrosion control in all our activities. For instance, I commend the Defense Department's Joint Council on Aging Aircraft for recently identifying corrosion as one of its top 12 concerns.

Back in February, I had the honor of addressing the U.S. Army Corrosion Summit, discussing some plans and actions that we planned to take to improve our understanding and management of corrosion. That was a timely meeting, for shortly afterward, we began a successful military operation in an extraordinarily difficult environment with admirable readiness rates and commendable performance from equipment and personnel, including the maintenance, motor pool, and flight-line personnel. I salute them all and the training that helped make high readiness possible. Our personnel are out there performing their part of the fundamental mission of the De-



**Our corrosion team[‘s] ... estimate for corrosion cost fell within the \$10 billion to \$20 billion range ... . If you consider that this year’s budget is a little over \$400 billion, then corrosion costs are close to 5 percent of this value.**

partment of Defense (DoD), which is national security. Our job is to provide them durable, reliable equipment.

## DoD Report to Congress on Corrosion

In February [2003], I emphasized that we in the DoD would be addressing the issue of corrosion in a more intensive and corporate manner and would be providing Congress with a report on our progress in December 2003 as requested. Congress asked us to identify a Pentagon executive to be the corrosion official, and I took on that job. I have been ably assisted by Daniel Dunmire and by Air Force Col. Larry Lee, who constitute our entire office of corrosion policy and oversight. Dr. Lewis Slotter of Defense Research and Engineering has been our technical conscience. They have been working with all the key players in the military services, DoD agencies, and with other stakeholders to pull together a corrosion plan and help to demonstrate to Congress that we are dealing with the problem of corrosion responsibly and efficiently and with an acceleration component.

Congress also asked the General Accounting Office (GAO) to independently assess the Department's corrosion situation and the approaches that were being taken to minimize the impact of corrosion. The GAO report was published in early July [2003]. I commend the GAO team for diligently and professionally looking into this intricate problem and for providing an independent assessment of the magnitude of the corrosion problem. Although we could not agree with all the findings and assertions in the work, we did concur with its recom-

mendations, which were parallel to the congressional direction and coincident with my own opinion that there are many things that we in the DoD can and should do better in dealing with this problem.

### **Five Key Areas Identified**

Let's quickly review what we talked about then, the progress made, and conclusions that can be drawn. The five key areas were:

- How big is the problem of corrosion in terms of money and impact on readiness and other measurable attributes?
- How could we save by the elimination of unnecessary corrosion control through accelerated modernization and the elimination of unnecessary infrastructure?
- Provide a review of current efforts and the establishment of a consolidated corrosion control strategy and plan.
- Develop better information sharing and outreach efforts and ensure that all our performers became better educated about corrosion and its control.
- Respond to me with what specific policy actions should we take to help you in the Services and the commercial sector help yourselves to help the warfighter.

### **Impact and Cost of Corrosion**

First, consider the impact of corrosion in terms of cost, readiness, and safety. These issues are inseparable. We fund preventative and remedial maintenance to make sure that our equipment is safely available to support our mission. Studies indicate that the direct cost of maintenance for aging systems, such as the Navy P-3 aircraft, is increasing. Determining, managing, and ultimately reducing the cost of corrosion while maintaining or improving safety and readiness are the central components of the Department's prevention and mitigation strategy. To quantify improvement—an indispensable metric—an accepted baseline must be established. In addition, reliable corrosion cost and impact estimates are necessary to identify areas requiring aggressive action and to justify the expenditure of scarce resources.

Our corrosion team completed an excellent study based on existing data and engineering judgment. Their estimate for corrosion cost fell within the \$10 billion to \$20 billion range generally cited and provides support for previous estimates. Their effort is the first step of an in-depth process that we have begun to identify and assess cost of corrosion to the Department. If you consider that this year's budget is a little over \$400 billion, then corrosion costs are close to 5 percent of this value. I firmly believe that we pay the most attention to the things that are measurable and measured. We need to determine what the preventable costs of corrosion are and then prevent them or mitigate them, depending on the better approach.

Second, the next base realignment and closure (BRAC) round is just beginning. It is the most aggressive we have ever considered. The secretary of defense wants to eliminate the estimated 25 percent overhang from our asset base that we have scattered around the world. All previous rounds of BRAC summed were less than this target. Today, not only do we have to keep up unneeded infrastructure, but also, more than ever before, we have to provide force protection to these facilities. The savings in operations and maintenance costs from reduced infrastructure are potentially enormous. The process is just under way and meeting its deadlines. We will know the real answer in FY05 when all the studies are completed and the recommendations are forwarded to the Commission. We will continue to follow the cost of corrosion control and savings as a part of this process.

### **Fleet Modernization**

Modernization of our fleets is another opportunity for savings. By fleets, I mean all of our equipment, not just ships but aircraft, ground vehicles, and surface and subsurface ships. Research and development have provided new materials, coatings, inspection techniques, and other processes to reduce the impact of corrosion in modern systems. Although we cannot yet provide an estimate of aggregate savings potential, one study conducted for the Air Force on the C-5 Galaxy and C-130 transport aircraft is illustrative. Aircraft upgrades and substitutions included more corrosion-resistant aluminum alloys in the wings and other structures, better sealants on faying surfaces, wet installations of fasteners, and use of corrosion-resistant topcoats in critical interior areas. The impacts of these actions were followed for 10 years. (It takes time to assess such effects and get good, defensible data.) For the C-5 there was a reduction in repair costs of 56 percent and a reduction in total corrosion maintenance cost of 53 percent. For the C-130, the results were even more impressive: reduction in repair costs of 83 percent and a reduction in total corrosion maintenance cost of 82 percent. These results provide just one example of the advantage of incorporating newer technology in existing systems, and they support my belief that upfront investment in corrosion-resistant materials and corrosion-preventing manufacturing processes produces a much higher payoff than treatment, repair, or replacement of corroded materials. As I review all these good studies and the potential for overall cost saving, I struggle with how to capture the true costs and incentivize the commanders so that they will appreciate that they can benefit directly from the return-on-investment of corrosion control. Through our new business initiatives, this comptroller is willing to consider and make it possible for the Services to retain some of the savings of smart business practices. I want to incentivize the commanders by making them effectively the retail owners of their equipment. Of course, in keeping with our efforts to transform our military, we do not intend to purchase just newer versions of older



systems. We want to acquire new kinds of systems wherever possible—systems that incorporate the best approaches based on commercial and military practice. Starting the corrosion control process in the factory or in the rework facility is far better than trying to do it later in the field.

## Communications and Outreach

As I have said many times, in complex problem areas like corrosion, there is no substitute for teamwork and for learning from the successes and failures of others. This brings us to our fourth key area: communications. There are several major parts to our communication and outreach activities:

- The establishment of a Web-based DoD Corrosion Exchange for information sharing and archiving
- The development of targeted corrosion courses and course content in our acquisition-workforce training to highlight to our program managers and maintainers the importance of corrosion control
- Outreach to private-sector corrosion stakeholders and the forging of partnerships with them.

The DoD Corrosion Exchange Web site is being developed to enhance communication within the entire DoD corrosion prevention and control community and to provide a two-way street for information exchange with commercial, academic, and other corrosion stakeholders and potential partners. **[Editor's note: The site is now operational at <[www.dodcorrosionexchange.org](http://www.dodcorrosionexchange.org)> .]** It is our desire that this exchange be the first stop for those needing or desiring corrosion-related information on DoD assets. It will be open, available, and, I believe, useful to the entire community—program manager through system maintainer, major system integrator through individual product vendor. Among the things to be found on the Web site are the latest DoD policy documents on corrosion, such as a memo to the Service secretaries that I signed on Nov. 12, 2003 [page 73]. The site also contains the new corrosion prevention and control guidebook [see “New Publication Provides Corrosion Prevention and Control Guidance” on page 36] that can be used by program managers to help design corrosion-resistant systems before they are fielded. I encourage you to become a using member and to contribute to the collaboration. I want to note that there are other corrosion sites and information sources that



**Smart corrosion control in sustainment provides efficiency in logistics.**

we will be linking to in partnership with industry counterparts.

As part of our communication and outreach activities, we want to focus on corrosion-related training of our workforce. As we identify shortfalls in corrosion training and certification, we will develop a “Corrosion 101” course and identify qualified trainers. As a start, we plan to include corrosion-related training for non-corrosion engineers, contract specialists, and program managers in the fundamental training curricula provided through the Defense Acquisition University. We will also ensure that the users learn more about corrosion prevention and that our maintainers are exposed to more basic knowledge on corrosion and its effects.

## Partnerships

I am a firm believer in the value of partnerships between government and private industry. That is why I am very pleased that NACE International—The Corrosion Society has become a full-fledged participant in our planning and deliberations. NACE has already agreed to take some actions

that should provide value and augment what we are doing on the government side. For instance, NACE is going to help us connect to other standards and educational associations and societies and even provide us access to all NACE standards and recent conference papers at no cost. In the training area, NACE will apply its great experience and successful history in corrosion continuing education by helping us develop appropriate career enhancement courses in corrosion. This is not an endorsement of NACE, of course, although I note that many DoD personnel are already members, but it is an idea for the future.

As you know, the DoD now relies on commercial and consensus standards for corrosion control processes and products. This makes it very important that our needs are covered by those standards. As a part of our Web-based communications and other partnering activities, we will endeavor to improve the understanding and access of corrosion product suppliers and qualifiers to DoD needs and markets and especially to minimize the burden of re-qualification of corrosion prevention products by providers.

Corrosion control is also an ideal area for small business to make a positive contribution. To give you some feel for our current outreach to small business, there are 22 cor-

rosion research topics in the small business innovation research program solicitation released in October 2003. This means that about one in every 20 topics addresses corrosion.

### Policy Actions

Now let me discuss the fifth key area, involving some policy actions we have taken. I have directed that all programs that come before the Defense Acquisition Board (DAB) should be able to assure me that they have fully considered corrosion prevention and control planning and have addressed any conflicts or issues that arose in the pre-DAB reviews. This planning will provide an objective and disciplined way to assure ourselves that corrosion is getting the attention it deserves in acquisition programs. It will help us make conscious, objective trade-offs between up-front investments and life cycle costs. To help implement this policy, we are using a corrosion prevention and control planning guidebook, which will help program managers in corrosion planning.

Let me be very clear on an important point: the new policy is not mandating that programs submit formal corrosion prevention and control plans. Acquisition reform has for the most part, discouraged formal plans as well as prescriptive requirements. On the other hand, in preparation for their appearance before the DAB, programs will be encouraged to include corrosion in overall planning and to demonstrate that they have accounted for potential corrosion risks in the design, development, manufacture, deployment, and sustainment of their systems. We will also encourage program management to establish corrosion prevention and control teams to assist in the planning process and to help ensure that corrosion is given due consideration.

### Objectives for Defense Acquisition and Logistics

Let me begin my wrap-up by putting corrosion in the larger context of defense acquisition and logistics. I would like to help the Department accomplish seven objectives:

- Acquisition excellence with integrity
- Logistics integrated and efficient
- Systems engineering philosophy restored
- Technology dominance
- Resources rationalized
- Industrial base strengthened
- Motivated, agile workforce.

I want to emphasize the motivated and agile workforce. It takes a trained and ready force to accomplish our missions. It takes a trained and ready force of maintainers, and it takes a trained and agile force of managers and executives, all of whom are really motivated, to make it work. I often said to my industrial brethren that it is not the value of the equipment that we provide but the training, the tac-

tics, and techniques of our brave men and women who turn valueless machines into effective military products. I feel the same way about corrosion prevention. It takes professionals to energize everyone to provide highly valued, reliable equipment to our warfighters. Corrosion assessment and life cycle cost analysis are critical to making intelligent acquisition. Doing assessments openly and honestly maintains integrity. Smart corrosion control in sustainment provides efficiency in logistics. The future logistics enterprise is going to rely on condition-based maintenance and prognostics to improve readiness and availability with corrosion prediction playing an important part. Finally, anything we do through small business, big business, or civic-minded organizations strengthens the industrial base and strengthens us all.

I think we have a pretty good idea of what to do in corrosion. We're asking you to ask yourselves how you can help us bound, then improve, this corrosion program. Knowing that everyone has objectives, I wrote some down for us to accomplish as a joint team. I know that there are already good objectives being worked by our teams, but let me add to the list.

- First, continue to bound the cost of corrosion. Our fleet—air, land, and sea—and our infrastructure are not getting any younger.
- Second, focus your effort by segmenting the problem. Air, land, sea, and infrastructure may not do it. Consider thinking about structure, mechanical interfaces, exterior surfaces, and electronics as they go across our fleet.
- Third, start a cross-Service pilot program that demonstrates real progress, and try to figure out the cost of corrosion and how you minimize the cost for at least that system and how you incentivize its owner.
- Fourth, develop a financial strategy that allows retention of savings (half or more) for more pilot programs and more investment.
- Fifth, continue to share best practices and lessons learned with the development and acquisition professionals.

As I mentioned, we have recently fought successfully for future peace and stability in two faraway lands. You have provided to the warfighter the best equipment that the world has ever seen—equipment with reliability even greater than was seen in Desert Storm only about a decade ago. As to the transformation impact, you have redesigned maintenance with a greater eye towards prevention and attention to mission cycle. One of my own goals is to reduce the need for spares and the need for field change-out. I will continue to ask manufacturers to produce things that don't break.

**Editor's note:** For more information, go to < [www.dodcorrosionexchange.org](http://www.dodcorrosionexchange.org) > .

# New Publication Provides Corrosion Prevention and Control Guidance

*Daniel J. Dunmire • Col. Larry A. Lee, USAF*

**D**epartment of Defense (DoD) program managers (PMs) and other acquisition officials are being asked to include corrosion prevention and control as one of the key elements in acquisition planning, design, and development. Although the acquisition community has long recognized the insidious and pervasive effects of corrosion on operational systems and support facilities, corrosion planning has largely focused on maintenance and logistics methods for detecting, assessing, treating, and repairing systems and components that have already been affected by corrosion.

The effects, impact, and cost of corrosion have been steadily increasing to the point that we have been obliged to review the current state of corrosion in military systems and facilities and take across-the-board action to resolve this growing problem.

Recent studies reveal that it costs the DoD between \$10 billion and \$20 billion each year to mitigate corrosion effects or try to prevent corrosion. The lion's share of these dollars go toward mitigation: assessing corrosion and its effects on operational systems and facilities; treating these systems and facilities to prevent or retard further effects; or repairing system and facility components that have suffered unacceptable damage from corrosion. Corrosion adversely impacts operational performance, readiness, safety, manpower, maintenance hours, and spare parts inventories. The ultimate effect is often the early retirement of expensive systems and facilities and the need to replace them with even more expensive assets.

## Corrosion Prevention and Control (CPC) Planning Guidebook

In order to assist the acquisition community to implement the CPC policy of the under secretary of defense (acquisition, technology & logistics) expressed in the policy letter on page 73, the CPC task force appointed by the under secretary [see “Corrosion Prevention and Control: Status and Update” on page 32] developed and published the *Corrosion Prevention and Control Planning Guidebook*, which is available at <[www.dodcorrosionexchange.org](http://www.dodcorrosionexchange.org)>.

The task force also generated responses and *Guidebook* references to frequently asked questions (FAQs) regarding the CPC policy. One FAQ is “Why should I follow the *Guidebook*?” The response reflects the source, overall content, and reason for the *Guidebook*: “The CPCP Guidebook has been developed by DoD science and technology, acquisition, and logistics experts who have combined their insight and experience with an understanding of new corrosion prevention and mitigation program requirements to produce this publication. The resulting *Guidebook* is a compilation of approaches and processes designed to improve readiness, lower life cycle cost, and improve safety by ensuring successful corrosion prevention and control.”

The *Guidebook* provides acquisition PMs with guidance in developing and implementing a CPC program for DoD weapon systems and infrastructure. This guidance includes programmatic considerations as well as corrosion-related technical aspects that should be addressed for a viable design. The *Guidebook* structure is built on a foundation of general knowledge and basic requirements; it then expands to cover detailed requirements, methods, and examples of approaches that might be taken by program managers and others in the acquisition community.

Corroded antenna base (left). HiTak(c) gasket (right) offers environmental barrier and protection. Images provided by Av-Dec, LLC.



*Dunmire and Lee are respectively director and deputy director, corrosion policy and oversight in the Office of the Under Secretary of Defense (AT&L).*



## Section 1: Requirements

The first section of the *Guidebook* addresses the scope and application of the document. Requirements for materials, processes, techniques, and tasks required to integrate an effective corrosion prevention and control program are to be implemented during all phases of DoD weapon systems and infrastructure development. The guide is applicable to all DoD procuring activities and their respective contractors involved in the design, procurement, and upgrades of DoD systems. And detailed plans and specifications apply to all elements of DoD systems, including spare parts.

## Sections 2 and 3: Documents and Definitions

The next two sections of the *Guidebook* address documents and definitions that form the framework for corrosion prevention and control planning and execution. Since the status of corrosion-related documents frequently changes, the *Guidebook* gives Web links to the latest list of applicable documents.

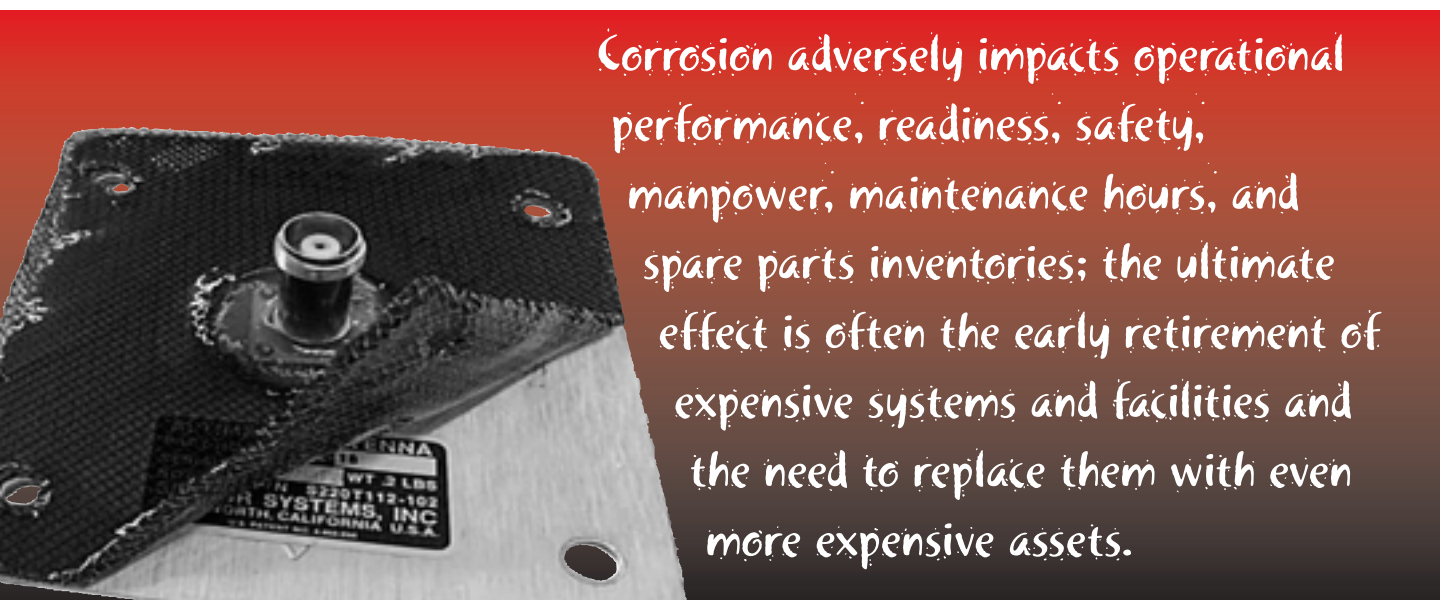
## Section 4: Corrosion Prevention and Control Plan

The fourth section of the *Guidebook* presents general requirements for effective corrosion prevention and control. This section highlights management planning (Figures 1 and 2) as well as technical and design considerations (Figure 3). Development and implementation of a corrosion prevention and control plan (CPCP) needs to take place early in the acquisition cycle and a corrosion prevention advisory team (CPAT) should be formed as part of the corrosion management structure. General design and technical guidance articulates the need for PMs to consider materials, manufacturing methods, and protective treatments that reduce failures as a result of deterioration. As they select suitable materials and appropriate processing manufacturing methods to satisfy system

requirements, PMs should also consider materials, processing methods, and protective treatments that reduce deterioration. The section also describes deterioration modes that contribute to failures caused by corrosion. Other technical guidance addresses material selection, preventive coatings, design geometries, and environmental considerations.

### FIGURE 1. Corrosion Management Structure and Basics

- Government PM sets up corrosion prevention advisory team (CPAT)
  - Develop corrosion prevention and control plan (CPCP)
- RFP evaluation factor for contractor CPCP
- Government and contractor establish technical design guidelines for life of system
  - How the particular program will implement CPC
  - Process/finish specification or equivalent document
  - Verification plan at system, assembly, and component level
  - Corrosion technical manuals and maintenance concepts
- Issues
  - Acquisition cost to implement changes
  - Warranties difficult to track and enforce
  - Priority of corrosion control versus other performance parameters



## FIGURE 2. Program Management

- Prepare a Corrosion Prevention and Control Plan (CPCP)
  - Define CPC requirements
  - List applicable specifications and standards
  - Address facility/system definition, design, engineering development, production/construction, and sustainment phases
- Corrosion Prevention Advisory Team (CPAT)
  - Established by PM as early possible in a program or before program initiation
  - Membership
    - Chaired by designated representative of procuring agency
    - Includes specialists from procuring agency
    - Includes representatives from the development contractor
  - Duties
    - Guide and document overall CPC planning efforts
    - Interface with the contractor's corrosion team (CCT)
    - Guide design, manufacture, test, and support of the system
- Contractor Corrosion Team (CCT)

### Section 5: Suggested Courses of Action

The first four sections of the *Guidebook* form the foundation for the detailed requirements described in Section 5. This section provides acquisition program managers with details and suggested actions concerning the establishment of requirements and the resolution of corrosion-related issues. It explains different aspects of program management, describes corrosion performance specification issues, discusses programmatic issues, and goes into significant detail regarding technical issues. The specific programmatic issues discussed in this section consist of acquisition costs, warranties, and corrosion control priorities. Important technical issues include variables influencing corrosion, potential solutions to corrosion problems, assessment of corrosion impacts, and corrosion-related testing.

Section 5 also discusses the integration of corrosion planning in the acquisition process. Along with a visualization of the time-phasing of corrosion-related planning activities during the acquisition cycle (Figure 4), it prescribes the inclusion of corrosion prevention and control language in acquisition documentation (such as the initial capabil-

ities document (ICD), capability development document (CDD), capability production document (CPD), request for proposal (RFP), and various specifications); and it provides examples of the language that could be used. Since the acquisition process for weapons systems varies from that for facilities and infrastructure, this section describes these processes separately.

Perhaps the most important paragraphs in Section 5 are concerned with the details of corrosion prevention and control planning. Initial requirements should be determined before creating the RFP to ensure that the selected contractor understands and abides by the requirements needed for successful corrosion prevention planning and execution. This planning includes provisions for establishing the CPAT, which will consist of both DoD and contractor members once the contract is awarded. The contractor also needs to have a contractor corrosion team (CCT) that includes a representative or representatives from the following: project design integrated product teams (IPTs); materials and process engineering; operations/manufacturing; quality control; material (or subcontractor) procurement; and contracts. Primary CCT functions include planning and implementing adequate corrosion prevention and control requirements for systems during all phases of the system life cycle. DoD members of the CPAT will interface with CCT members to en-

## FIGURE 3. Precautionary Design Measures

- Material Selection
  - Avoid materials unsuitable to operational environment if possible
  - Consider material compatibility
  - Isolate dissimilar materials from each other
- Protective Coatings
  - Use to isolate vulnerable materials from the environment
- Design Geometries
  - Avoid crevices when possible
  - Avoid design features that make it difficult for protective coatings to function (sharp corners, for instance)
  - Avoid geometries that unnecessarily trap contaminants/moisture
- Modify the Environment
  - Consider a design that allows for the modification of the environment to which materials will be exposed
  - Dehumidification and sheltering can be effective to modify the environment

sure that corrosion prevention and control requirements and goals are met.

The CPCP is described in detail in Section 5 where it prescribes these organizations, processes, and other requirements. If possible, the initial draft of the CPCP should be complete before Milestone B. The initial purpose of this plan is to set up the CPC program or project management approach, document corrosion-related design needs, and identify materials and corrosion control methods for use in the manufacture of the system. The CPCP should also outline how the contractor will assure vendor and subcontractor compliance with the corrosion plan approved by the program or project manager, including installation of government-furnished equipment. After contract award, the CPCP should be maintained by the contractor and approved by the CPAT and program or project manager. Revision of this document should be accomplished as required to properly record a change or changes to materials and processes being used for corrosion prevention and control. The CPCP should provide the following information:

- The organization, procedures, and responsibilities for a CCT
- Roles and responsibilities of quality assurance, process control, production operations, manufacturing planning, environmental compliance, personnel safety, and other contractor organizations for the CPC effort
- Discussion of corrosion prevention techniques employed in design and of how the design will meet the projected environmental spectrum
- Specifications detailing application of coatings and other corrosion prevention compounds. These process instructions should address personnel training and qualification, material inspection, surface preparation, and coating or compound application procedures
- Any test data developed or to be developed for coatings or other corrosion-related materials and processes.
- Identification of coating/substrate combinations for which no testing is to be performed, with assessment of risk levels in the absence of testing
- Recommended corrosion control-specific maintenance.

Other important documents are also described in Section 5. A process/finish specification (or equivalent) must be developed by the contractor to identify the specific organic and inorganic surface pretreatments and coatings and other corrosion prevention and control materials and processes the contractor intends to apply. Likewise, a system verification plan must be submitted to define the types and levels of corrosion testing and qualification that should be incorporated in the environmental test and verification plan.

The appendices in the *Guidebook* provide added information and supporting documentation for acquisition

program managers: the policy letter of the acting under secretary of defense (AT&L); examples of corrosion prevention and control plans; an example of a CPAT charter; and design guidance for facilities and infrastructure.

### User-friendly Guidance

In creating the *Guidebook*, the CPC task force attempted to create a document that is comprehensive, flexible, and easy to use. We expect its usefulness will be enhanced by corrosion training to be provided by the Defense Acquisition University and other training organizations. Acquisition PMs will find they have considerable latitude in applying the requirements and approaches described in the *Guidebook*.

The message is clear. Corrosion and its effects cost the DoD dearly in readiness, safety, and resource consumption. The Congress (and the GAO) recognize the problem and potential solutions and have provided significant direction and motivation to resolve the corrosion problem. The DoD has responded positively to the congressional direction by establishing a strong, proactive corrosion prevention and control program under a dedicated DoD directorate.

Analyses show that the highest payoff on corrosion control investment occurs when we prevent corrosion during the design and manufacture of systems and facilities. Now it is up to the acquisition community to embrace the corrosion prevention culture and implement corrosion prevention and control planning as an integral part of system design and acquisition. The *Corrosion Prevention and Control Planning Guidebook* provides us with the primary tool to accomplish this goal.

**Editor's note:** The authors welcome comments and questions. Dunmire can be contacted at [daniel.dunmire@osd.mil](mailto:daniel.dunmire@osd.mil) and Lee at [larry.lee@osd.mil](mailto:larry.lee@osd.mil).

### FIGURE 4. The Acquisition Process and CPC Planning

Approximate timing for CPC planning is indicated by numbers placed in reference to the phases of an acquisition program:

1. Initial corrosion prevention and control plan (CPCP) drafted
2. Government-only corrosion prevention advisory team (CPAT) established
3. Contractor corrosion team(s) (CCT) established
4. Joint government/contractor CPAT established
5. CPCP updated



# Requirements: The Root Of All Evil

## Observations on Life, Death, and Requirement Definition in Defense Acquisitions

*Capt. Daniel Ward, USAF*

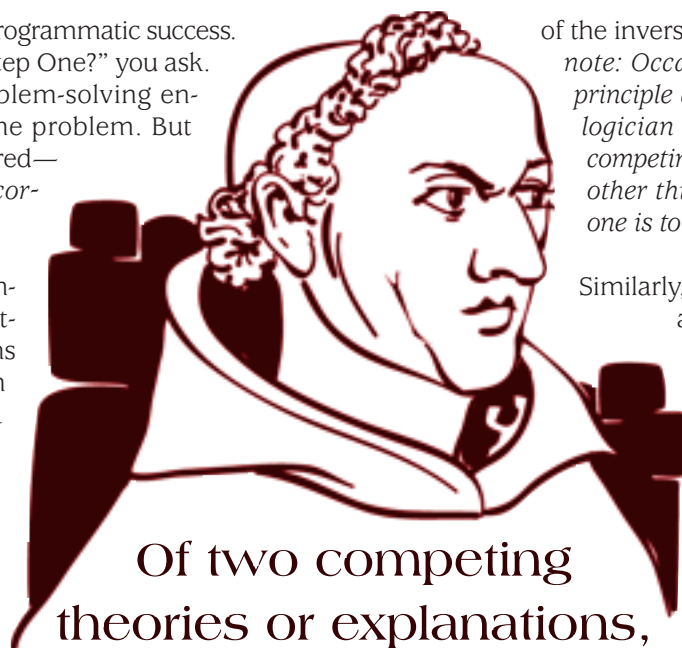
**S**tep Two is the key to programmatic success. “What happened to Step One?” you ask. Step One in any problem-solving endeavor is to define the problem. But Step Two—often ignored—is to define the problem *correctly*.

Every development effort inside or outside the Department of Defense (DoD) begins with some form of problem statement. Whether it’s a mission needs statement, operational requirements document, statement of objectives, or a combination thereof, at some point program managers are faced with what can generically be called a requirement—a description of something that someone needs.

Since this starting point largely drives all subsequent tasks, it’s very important to get it right. And since operators and technologists tend to speak different languages, getting it right can be very difficult. Requirements are, therefore, the lingua franca that operators and developers use to establish a common understanding of the operators’ needs and the developers’ intentions. Like any language, proficiency in “requirement speak” comes with study, practice and prolonged exposure to native speakers. This article, of course, falls in the study category—actual usage is up to the reader.

### Occam Undone

As H. L. Mencken said, “For every human problem, there is a neat, simple solution; and it is always wrong.” Sort



Of two competing theories or explanations, all other things being equal, the simpler one is to be preferred.

of the inverse of Occam’s Razor. [Editor’s note: Occam’s or Ockham’s Razor is a principle attributed to the 14th century logician William of Ockham: Of two competing theories or explanations, all other things being equal, the simpler one is to be preferred.]

Similarly, for every situation, there is a problem statement that is obvious, simple—and likely to be absolutely incorrect. It isn’t that simplicity plus obviousness always equal the wrong answer. After all, good solutions often are obvious and simple. But the point is that not every obvious and simple “solution” is a good one. The reason so many problem statements are bad is they not only presuppose a solution, but they settle for the obvious/simple/wrong solution.

But by talking about solutions, we are getting ahead of ourselves. Real solutions to real problems are much easier to find if the actual problem is well understood and clearly stated, without presupposing any particular solution. The problem statement, therefore, must be simple but is seldom obvious except in retrospect. Hence the need for Step Two, since our first attempt is often incomplete or incorrect.

### The Only Thing You Have To Do

My seventh grade math teacher, Mr. Byther, always gave the same answer when we asked if we had to do our homework in a particular way. In fact, he sometimes gave this answer even if we didn’t ask. With a broad grin, he

*Ward is an InnoVisioneer in the Horizontal Integration Office of the National Geospatial Intelligence Agency’s InnoVision Directorate. He is Level-III certified in SPRDE and Level-I certified in PM and T&E.*

told us, “The only thing you *have* to do is die.” He mathematically divided the famous certainties of death and taxes in half, and death was the only remainder. His point was this: there is only one real requirement. You can always live in the woods and avoid paying taxes or refuse to pay and get sent to jail, but eventually we all meet our maker. Mr. Byther’s ability to get to the heart of the problem—the real requirement—has been a lasting lesson these many years since seventh grade.

## What A Tangled Web We Weave

“The truth,” as Oscar Wilde put it, “is rarely pure and never simple.”

### Example Number One: We Need More Analysts!

A frequent complaint in the Intelligence Community (IC) is the shortage of analysts, and no doubt there is a need for more people with the rare and valuable skills necessary to interpret and understand the vast quantities of intelligence data collected every day. However, anecdotal observations lead to a somewhat modified problem statement.

Watching a number of analysts at work, it becomes apparent that they spend a lot of time trying to collect and access relevant data and relatively little time doing actual analysis. In fact, some analysts estimate that upwards of 50 percent of their time is spent searching for data. So perhaps the problem is not merely too few analysts but too much difficulty accessing data.

Why is it so difficult to access data? One possible reason is that the tools provided by the acquisition and technology community are too difficult to use. Why weren’t simpler tools provided? Perhaps because the analysts didn’t submit a requirement for them. Why didn’t the analysts submit a requirement? Perhaps because the requirement submission process is too difficult and mysterious. Or perhaps because they subscribed to received wisdom that

the problem was a shortage of analysts and didn’t think any further.

The IC’s problem now sounds quite a bit more convoluted than a simple shortage of analysts—and even so, it’s likely we haven’t defined the problem in terms of a root cause.

Where does it end? It ends when we are finally able to define what the actual problem is, and not in terms that beg the question or presuppose a quick solution. Are there too few analysts? Perhaps. But the *actual* problem is deeper than that, and until the actual problem is identified, it will probably not be resolved.

While we shouldn’t undervalue a gut-level assessment of what’s needed, we can’t simply stop there either. Our understanding of a problem drives the requirements we levy in an attempt to solve the problem. That is why it is important to understand the actual problem and to write requirements that do not dictate solutions.

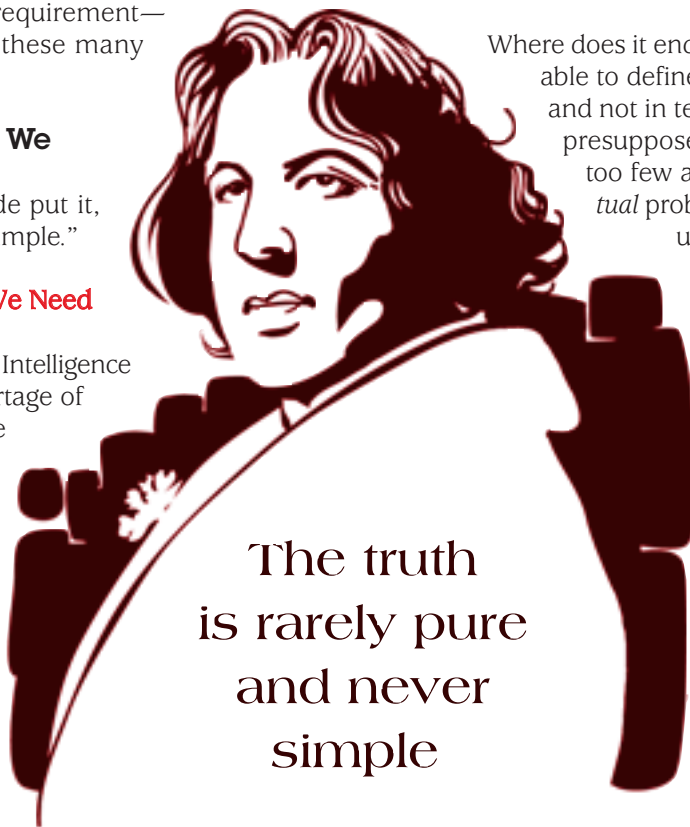
Warfighters don’t need System X. They need to be able to do A, B, and C.

### Example Number Two: We Need More Training!

At a recent conference, loud complaints were voiced about a lack of training for particular operational specialties. However, “We need more training!” is a problem statement that presupposes an easy solution. There may indeed be a significant training shortfall, but the root of the problem is deeper and merits a closer look.

Rather than simply needing more training, perhaps these individuals need easier-to-use systems that don’t have such a steep learning curve. Perhaps they need a more focused and consistent mission or a decreased rate of personnel turnover. Maybe they just need encouragement and appreciation.

Most likely, the requirement is something along the lines of this: “We need to produce a specific effect. Producing this effect given current rates of personnel transfer and with our current systems requires a larger training investment than we are currently making. So we either need more or better training, less frequent rotations, easier-to-use systems, or a simplified mission.” This state-



## A Good Requirement

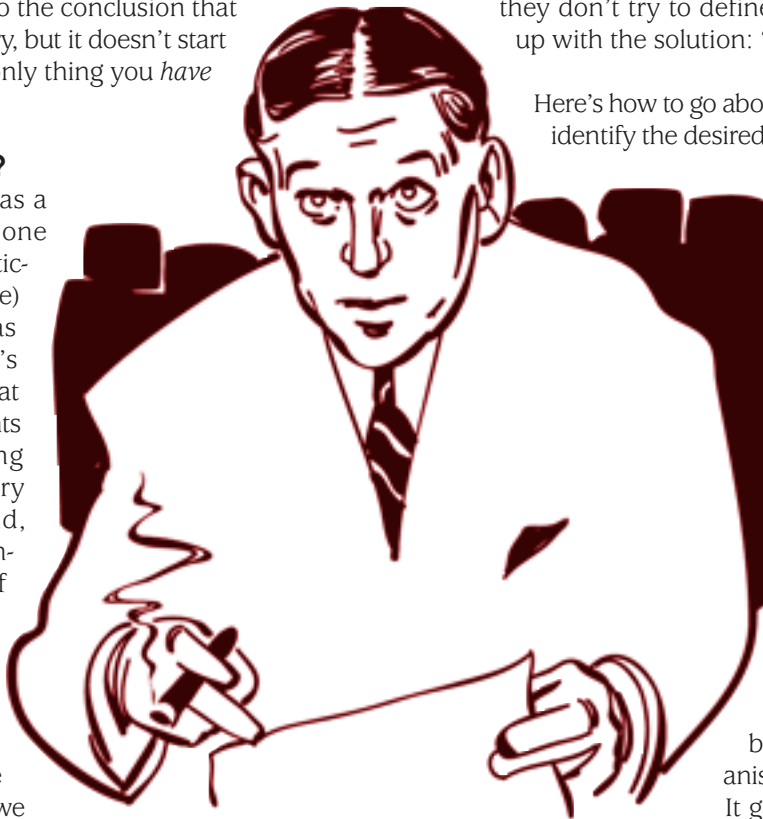
- Is measurable and achievable
- Doesn’t get written in stone
- Doesn’t presuppose a solution
- Can be met in a variety of ways

ment may indeed lead to the conclusion that more training is necessary, but it doesn't start there. (Remember, the only thing you *have* to do is die.)

### The Root of All Evil?

The title of this piece has a double meaning. On one hand, requirements (particularly when they change) are occasionally seen as the program manager's bane, despite the fact that satisfying the requirements (yes, even the changing ones) is the PM's primary task. On the other hand, a good requirement identifies the root cause of some type of "evil"—an operational shortfall currently unmet by existing capabilities—and so a well-done requirement is indeed the core of a problem. Although we may not like to admit it, defining a requirement correctly often takes more than one attempt.

How then shall we proceed? At the risk of contradicting the esteemed Dr. Steven Covey, highly effective people do not start with the end in mind. That is,



For every human problem  
there is a neat, simple  
solution; and it is  
always wrong.

they don't try to define the problem by coming up with the solution: "We need more training!"

Here's how to go about it. Investigate deeply and identify the desired capability or effect, which

may be arrived at by a number of paths, including some that are as yet undefined. Connect developers and operators early and often, to ensure they are all speaking the same language. Take the advice of software guru Eric Raymond and "expect to start over at least once." Establishing a mechanism for implementing Step Two

(define the problem correctly) may be difficult, but not having such a mechanism is unacceptably foolish.

It gets easier if we admit the existence and validity of changing requirements and accept the fact that a target does not cease to be a target when it starts moving.

**Editor's note:** The author welcomes comments and suggestions. He can be reached at [wardd@nga.mil](mailto:wardd@nga.mil).

## The American Soldier

**T**he American Soldier, representing all men and women who wear the uniform, has been named *Time* magazine's Person of the Year. Three 1st Armored Division soldiers—Sgt. Ronald Buxton, Spc. Billie Grimes and Sgt. Marquette Whiteside—are featured on the magazine's Dec. 29 – Jan. 5 cover.

Photo by James Nachtwey/VII for *Time*, used by permission





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### Heroic Management

Dear Editor:

The recent article "Heroics, Process, and Program Management" (*PM*, September-December 2003) properly honors the many heroes that deliver repeated successes despite the challenges imposed by an overly bureaucratic Defense establishment. Unfortunately, the authors quickly confuse the issue by describing heroics as an acceptable substitute for basic project management skills. Effective organizations need both. To truly honor our heroes, we should recognize them as the "sprinters" who doggedly carry projects across the finish line when things don't go as expected. Managers must use these valuable resources wisely—good coaches don't force sprinters to run marathons. Individuals get tired, transfer (along with their heroic knowledge), and sometimes fail to grasp essential elements of the "big picture" precisely because they're individuals. It's the manager's responsibility to ensure organizational learning and synergy by providing an enabling framework which allows everyone on the team to be a hero when the opportunity arises. Let's honor the heroes, but if you're managing by heroics, you're not managing!

*Lt. Col. Rod Wilkinson  
USAF (retired)*

**The authors respond:** We appreciate the thoughtful comments. We hope our article did not give the impression that we advocate heroics as a substitute for good

management or that managing by heroics is the best way to proceed. Rather, we were challenging the belief that heroics are something to be avoided, rejected, or disparaged. As our conclusion stated, heroics can indeed be a sign of a disorganized mess (i.e., a lack of solid management practices). ... but even in that case, the heroes are still heroic and their contributions should not be downplayed.

### Spiral Development

Dear Editor:

The July-August 2003 issue of *PM* somehow arrived at my mailbox yesterday, Nov. 6, 2003. That is almost as much of a mystery to me as is the explanation of this thing that the community is labeling Spiral Development ("Evolutionary Acquisition Strategies and Spiral Development Process," *PM*, July-August 2003). I guess if someone wants to call it Spiral Development, drive on. But it seems to me that since this label is an integral part of engineering and scientific endeavors, it ought to reflect the logic that engineers and scientists are accustomed to. A spiral is three dimensional. What are the dimensional axes of "spiral development"? Pictorially, this phenomenon being labeled spiral development is illustrated as a sine wave ... sort of. Maybe that is too hard. OK. Finally someone has published a definition of Spiral Development. No, correct that: three definitions. But where have these people writing the definitions been? What gives them the idea that pre-spiral development stakeholders were not motivated



to collaborate and mitigate risk? Or did not have a development plan and decision process? Or that requirements were not refined through experimentation and risk management and feedback? I think they are breaking their own arms patting themselves on the back with the “invention” of spiral development ... however different that really is, other than rhetoric and handwringing.

Think about this. The Abrams tank, as one of many examples, is, by many metrics, the world's best such piece of equipment. It was fielded by that other management process even if detractors do claim it was slow.

This was a good and interesting issue of *PM*. Keep up the good work.

*Carroll D. Childers P.E. (retired)*

**The author responds:** Thank you for your comments. Spiral Development (SD) is not a new term. Barry Boehm (1988) described SD as a risk-driven approach and then (2000) as a cyclic approach for incrementally growing a system's degree of definition and functionality while decreasing its degree of risk. The application of SD from a predominately software development environment to a more global acquisition environment has created some confusion. However, the basic tenets are the same and we provided some background of how the definitions of Evolutionary Acquisition (EA) and (SD) have evolved to the current May 2003 DoD

5000 policy. The implementation of these will further evolve as the DoD matures the use of integrated architectures to guide the requirements and acquisition process.

In a briefing on Sept. 10, 2001, Secretary of Defense Donald Rumsfeld noted that it takes twice as long to field a weapon system as it did back in 1975 and that many of our fielded technologies are at least a generation old the day they are deployed. So, as with the detractors of the Abrams, the perception is that it takes too long to field new weapon systems. The problem hasn't been the motivation, skill, or dedication of the acquisition workforce but the rules and processes that led to inefficiencies and lack of flexibility in the acquisition of weapon systems. To reduce acquisition response time, the DoD has refined its requirements and acquisition policies, which will allow for an easier application of EA strategies and SD processes.

**Editor's note:** *The Defense Acquisition University Press regrets the considerable delay in distribution of the July-August 2003 issue of PM. The magazine, we're happy to report, is now back on schedule.*



# MESSAGE FROM THE ARMY DIRECTOR, ACQUISITION CAREER MANAGEMENT

**O**ur Army is at war and simultaneously moving toward a future force. We face many new challenges and must ensure our limited military acquisition assets are in positions to best meet the Army's needs and provide the necessary experience to prepare our majors for product and project management, and acquisition commands. We must also ensure our LTC and COL positions reflect current and future requirements, not the past. In an effort to meet these challenges, I plan to chair a review of all active component military acquisition positions from March 22-26, 2004. Participation is expected from the senior most personnel during this timeframe. Again, it is imperative that we use a holistic approach to career development as well as meeting the needs of the Army so that we can better focus resources in a timely manner.



The FY05 Military Acquisition Position List (MAPL) Review will review all Army Functional Area 51 requirements and develop an Order of Merit List (OML) for the FY05 MAPL. At the conclusion of the FY05 MAPL Review and prioritization, the number of authorized positions will match the total number of MAPL positions.

The FY05 MAPL Review will use the Table of Distribution and Allowances/Military Table of Organization and Equipment (TDA/MTOE) as a baseline. The MAPL position must be supported by a valid MTOE/TDA authorization. The current MAPL has grown such that the relatively small inventory of officers cannot support the additional position requirements. Commands may identify high priority requirements for which no authorizations exist but must be prepared to identify a billpayer to support such a requirement. However, requirements without a billpayer authorization will be evaluated to determine if they warrant movement of another authorization to support the position.

I cannot over emphasize the importance of conducting a thorough analysis and update of your positions. The quality and accuracy of previous MAPL position descriptions and information has varied greatly between organizations. Proponency officers at the Acquisition Support Center are available to assist in your analysis.

Specific instructions on the FY05 MAPL Review will be distributed under separate memorandum to your command and subordinate command acquisition points of contacts. The FY05 MAPL will be approved and disseminated in May 2004.

My point of contact is LTC Dwayne Green, commercial (703) 805-1025, DSN 655-1334 or e-mail: [Dwayne.Green@us.army.mil](mailto:Dwayne.Green@us.army.mil).

JOSEPH L. YAKOVAC  
Lieutenant General, GS  
Military Deputy to the  
Assistant Secretary of the Army  
(Acquisition, Logistics and Technology)

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# Army Logistics White Paper

## "Delivering Materiel Readiness to the Army"

**T**he Army G-4 exists to deliver materiel readiness to our Soldiers—a task that has remained the same for years. Today's operating environment has changed; we are an Army at War... relevant and ready. Our most critical task is to sustain the combat readiness of our Deployed Force and to maintain the operational readiness of the Current Force. The Current Force provides the warfighting readiness that serves our nation. The Current Force must adapt to a changing enemy and fight and win decisively against any threat. Our fundamental challenge within G-4 is to enhance our current capabilities while transforming Army Logistics for tomorrow. We will accomplish this vital task by focusing our efforts on four clear objectives.

This White Paper describes four G-4 Focus Areas we will hold preeminent over the next two years. It addresses known shortfalls in our current structure that require immediate action, and directly supports our Army's transition to an expeditionary force that is agile, versatile, and capable of acting rapidly and effectively. These Focus Areas are the Army G-4's highest priority, and we will apply our policies, processes, and resources to ensure success.

### Focus Area #1—Connect Army Logisticians

Today's Army Logistician cannot see the requirements on the battlefield. Our customers cannot see the support that is coming their way. As a result, we rely on pushing support based on our best estimate of what we think the Soldier needs. Soldiers order the same item several times because they have no confidence support is on the way. We will solve this problem by connecting Army Logisticians. Army Logisticians will be an integral part of the joint battlefield network with satellite-based communications that pro-

### From the Editor

*The Army's Office of the Deputy Chief of Staff, G-4, released in late December 2003 an Army Logistics White Paper, "Delivering Materiel Readiness to the Army," describing logistics shortfalls and near-term priorities.*

*"It's our strategic vision," said Lt. Gen. Claude V. (Chris) Christianson, Army G-4. "The paper's intent is to provide clear guidance where we want to take Army logistics in the next two years. It is tied directly to what we have experienced in the past few years."*

*For the benefit of our readers, the paper is presented here in its entirety. This summer, Defense AT&L will also be publishing an interview with Christianson that will focus on the logistics failures and successes he observed while serving as the principal Operation Iraqi Freedom logistics operator, the C-4/J-4 for the Coalition Forces Land Component Command headquartered in Kuwait, from August 2002 through July 2003.*

vide 24/7 connectivity on demand, enabling them to pass and to receive key data from the battlefield to the industrial base. This connectivity will cover the battlefield, and it will provide Army Logisticians the agility and flexibility to quickly plug into and unplug from a dedicated network with an asynchronous (stand-alone) capability.

The G-4, along with the U.S. Army Materiel Command (AMC) and the U.S. Army Combined Arms Support Command (CASCOM), will work with the Chief of Staff of the U.S. Army (CSA) Task Force Network to ensure logistics communications solutions are embedded within the Army's

network and will optimize joint and combined operations in an expeditionary environment. Our Enterprise Resource Planning work in Battle Command Sustainment and Support System (BCS3), Global Combat Support System—Army (GCSS-A), Logistics Modernization Program (LMP), and Product Life-cycle Management (PLM + ) are critical to implementing fully this Focus Area from foxhole to factory to foxhole. The logistics common operating picture (LCOP) will be improved by this network connectivity, and it will provide the vital link in the joint commander's ability to see the force and to make decisions based upon accurate, real-time logistics information.

### Focus Area #2 - Modernize Theater Distribution

Today's Army is not able to respond rapidly and precisely when support requirements are identified. We do not have the battlefield distribution system that we need. We cannot provide time-definite delivery schedules, and we cannot effectively control physical movements across the new battle environment. Effective theater sustainment rests solidly on the fundamental concepts of distribution-based logistics. We need a single focus on the simple task of guaranteeing



Lt. Gen. C.V. Christianson, USA  
Deputy Chief of Staff, G-4  
Headquarters Department of the Army



delivery—on time, every time. We must have a distribution system that reaches from the Soldier at the tip of the spear to the source of support, wherever that may be. Our success will be measured at the last tactical mile with the Soldier.

We will build warfighter confidence by increasing visibility and establishing flexible, responsive distribution capabilities. We will not need to store large quantities of supplies forward because we will respond to customer requirements with speed and precision. The G-4 will work with CASCOT and the U.S. Transportation Command, the DoD distribution process owner, to develop this solution from factory to foxhole in the joint environment. Along with AMC and the Defense Logistics Agency, we are committed to enabling an effective distribution-based sustainment process. We will work with the CSA Task Force Modularity to develop this objective in the near term.

### Focus Area #3 – Improve Force Reception

We have invested heavily over the past 10 years in improving our ability to deploy rapidly from our continental U.S. platforms. The strategic movement of forces by

Large Medium Speed Roll-On/Roll-Off (LMSR) vessels and C-17 aircraft has significantly enhanced our capabilities. However, we have not invested at the other end—in our ability to receive forces in the theater. We are hamstrung by the lack of an organizational construct that focuses on joint theater opening tasks. Today, we build ad hoc support organizations to execute aerial and sea port of debarkation operations, and we depend on forces from several organizations to establish the theater sustainment base. This process of receiving forces in theater takes time, a luxury we will not have as the Army develops an expeditionary structure that is capable of rapidly deploying joint-capable force modules.

In order to effectively facilitate the immediate operational employment and sustainment of the expeditionary force flow, we will design an integrated theater-opening capability that can respond on extremely short notice and can execute critical sustainment tasks immediately upon entry. That theater-opening capability will not be an ad hoc organization. It must be a support organization that has trained to the task. It must be enabled with the right tools to succeed, and it must have the capacity to expand to meet theater growth. The critical operational tasks for this

## Staff and Faculty from Defense Acquisition University Respond to Critical National Mission

**F**aculty and staff members from the Defense Acquisition University are providing ongoing support to the Iraq Program Management Office (PMO), a component of the Iraq Coalition Provisional Authority (CPA). The PMO was commissioned to provide oversight, management, and execution of the infrastructure reconstruction effects in Iraq. Under intense pressure to expedite award of the \$18.6 billion supplemental appropriation—a mission they took on in November 2003—DAU team members **Garry Shafovaloff**, **Linda Neilson**, **Lyle Eesley**, **Larry “Scoop” Cooper**, and **Bart Morrison** have devoted countless hours and contributed considerable subject matter expertise to this critical national mission.

From the inception of the CPA-PMO, Deidre Lee, the Director of Defense Procurement and Acquisition Policy (detailed to the CPA for three months as Deputy for Operations), looked to Garry Shafovaloff and Linda Neilson to provide key leadership roles; craft innovative acquisition strategies; manage the coordination and integration of reconstruction project requirements with CPA-Baghdad and Office of the Secretary of Defense; resolve interagency development issues; respond to congressional inquiries; and coordinate policy with the White House. Eesley and Cooper continue to support the PMO and Sector PMO source selection process. Eesley also serves as the technical team chief for the source selection team. Morrison continues to provide support to the Construction Contracting Team serving as the lead knowledge management officer and workforce development specialist.

**A**rmay Sgt. Maj. **Steve Gebert**, DAU South Region, was activated for Operation Iraqi Freedom (OIF), and served as Kuwait Aerial Port of Debarkation (APOD) Operations coordinator from March to May 2003. From May to September he served as an action officer building daily and updated situation report briefings for the Central Command (CENTCOM) Regional General Staff, participated in those briefings, and

worked distribution control and movement logistics actions. Since returning from OIF, Gebert has been involved in building an Operational Logistics Case Exercise based on his OIF experience for inclusion in LOG-304. He has also been working on an article identifying key logistics shortfalls, how they were overcome in the Iraqi War, noting what went well, and any recommendations for systemic change.

**D**uring summer 2003, a DAU team provided exceptional performance support and rapid response to the Army's request for immediate instructional assistance for soldiers awaiting deployment orders, with an immediate need for training in both the CON-100 arena and in CON-234 (Contingency Contracting). Team members included **Philip Deaton**, DAU South; **Ronald Fontenot**, DAU South; **Debbie Johnson**, DAU Midwest; **Air Force Maj. Michael McGhee**, DAU Midwest; **Air Force Lt. Col. Ralph Mitchell**, DAU South; and **Pamela Oxendine**, DAU Midwest. In less than 21 days, this small team worked tirelessly to deliver a nine-day targeted training course that met the learning objectives of both courses in the constrained delivery time, while receiving high marks for quality and delivery from the warfighters.

**A**rmay Sgt. **James W. Colbert**, a member of the Video Services Department, Operations Group, DAU main campus, at Fort Belvoir, Virginia, was tasked with a critical assignment in support of the Iraq Infrastructure Reconstruction Office. Under intense pressure to deliver the finished product to soldiers awaiting deployment to Iraq, he edited, enhanced, encoded, and published over 20 hours of 18 separately recorded sessions of instruction in Contracting. Most notably, he did so in only four working days, receiving praise for the quality of his work and his efforts in delivering just-in-time training to the nation's warfighters.

# Sixteenth Annual International Defense Educational Arrangement (IDEA) Seminar



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**T**he Sixteenth International Defense Educational Arrangement (IDEA) Seminar will be theme-based and will provide for your individual participation and positive information exchange and feedback.

The seminar is sponsored by IDEA, which consists of defense acquisition educational institutions in the United Kingdom, Germany, France, Spain, and the United States.

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Invitations, confirmations, and administrative instructions will be issued after May 1, 2004.

**Contact an IDEA Team Member for  
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## **Focus Area #4 – Integrate the Supply Chain**

Over the past several years the Army has taken supply reductions at many levels for various reasons. We changed Army policy several years ago to reduce the amount of items carried on unit prescribed load listings while simultaneously reducing stock levels in many authorized stockage lists across the field army. Additionally, we took risks at the strategic level by underfunding strategic spares programs. The cumulative result of these reductions is a lean supply chain without the benefit of either an improved distribution system or an enhanced information system. As a result, our Soldiers are at the end of a long line of communication with reduced inventories and an old distribution system.

We will view the supply chain in a holistic manner to ensure we understand the impact of actions across the entire chain, not just at a single level or within a single Service. This joint, end-to-end view is essential if we are to provide the kind of support our Soldiers deserve. The solution is an enterprise view of the supply chain, and an agency and a Service integration of processes, information, and responsibilities. We are committed to developing the Army's Enterprise Solution to the supply chain in close coordination and alignment with DoD's Focused Logistics Initiative. Ultimately, joint information will be freely and automatically shared among strategic, operational, and tactical-level headquarters and agencies. Consumers and logisticians from all agencies and Services will enter local supporting systems, plug into the sustainment network, and be afforded end-to-end joint total asset visibility (JTAV). As a result of our Theater Distribution efforts, combatant commanders will be capable of seeing inventory in motion, as well as seeing what is available at storage locations, and they will be able to rapidly and effectively execute decisions that meet their requirements.

## **Conclusion**

We will build confidence in the minds of the combatant commanders by delivering sustainment on time, every time. We can do that only if we provide Army Logisticians the capability to see the requirements every day and to control the distribution to guarantee precise, time-definite support. Army Logisticians will be part of joint and combined logistics processes that increase speed to deliver focused logistics. We will integrate real-time total asset visibility and seamlessly connect to the industrial base. This will give us an LCOP that will enable the kind of end-to-end control that always delivers the right support to the exact location at the precise time needed. If we do not connect Army Logisticians, improve the capability of the distribution system, modernize force reception, provide integrated supply management and give the joint force combatant commanders JTAV, we will study these same lessons after the next major conflict. The Army G-4 is committed to ensure that we will not have to relearn these same lessons.

organization include: (1) providing operational sustainment command and control with reach-back capability and initial network visibility; (2) conducting theater reception, staging onward-movement and integration operations, to include life support, force protection and port of debarkation operations; and (3) sustaining forces in theater with theater distribution and requirements visibility.

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## ARMY PUBLIC AFFAIRS PRESS RELEASE (NOV. 19, 2003)

### ARMY BUSINESS INITIATIVES SAVE TIME AND MONEY

**T**he Acting Secretary of the Army, R.L. Brownlee, has approved 13 new business initiatives as part of the Army Business Initiatives Council (ABIC), a process designed to identify and implement business reform actions.

The approved Army initiatives include a variety of cost-cutting and quality enhancing measures, to include:

- Shortening force modernization processes to speed the fielding of new systems.
- Exploring ways to reduce costs of construction equipment.
- Reducing the cost and time needed to reverse engineer obsolete parts.
- Standardizing the acquisition reporting process.
- Simplifying the process for securing approval for needed changes and improvements to the Army's 4,500 historic barracks.

Additionally, on Oct. 1, 2003, the Army became the executive agent for administration of the Department of Defense (DoD) Business Initiatives Council (BIC), which was transferred from the Air Force. That responsibility is shared among the services on a six-month rotational basis to help assure commitment and participation.

The DoD BIC was formally created in 2001 by Secretary of Defense Donald Rumsfeld and both the Army and DoD councils focus on identifying ways to streamline stringent requirements, cumbersome directives, and lengthy staffing processes.

Of the 13 approved initiatives, 10 are Army only and the other three are recommended for submission to the DoD BIC for review, as they may have benefits that could be extended across all the military services. To date the Secretary of the Army has approved a total of 79 ABIC initiatives. A complete list of the Army approved initiatives can be found at <http://www.asafm.army.mil/bic.asp> > .

In addition to focusing on cost savings and cost avoidances, the ABIC looks for initiatives which streamline processes and procedures in order to reduce cycle times and use soldiers' and civilians' time more efficiently.

"These initiatives continue to focus on key areas in need of improvement, such as reducing cycle time, shorten-

ing processes, and reducing costs," said Mr. Don Tison, the executive director of the Army BIC.

Tison added that a major benefit of the Army BIC program is that money saved from an approved initiative goes right back to the organization that submitted it.

"This is a great program and, with increased participation, we'll continue to improve the Army's business practices, allowing us to redirect the time and money saved to more critical needs," said Tison.

This round marks the sixth time that the Army BIC has met since 8 May 2002.

## AMERICAN FORCES PRESS SERVICE (NOV. 21, 2003)

### NEW PROTECTION AHEAD IN HELMETS, BODY ARMOR

*Donna Miles*

**W**ASHINGTON (AFPN)—New, reinforced helmets and body armor currently being fielded to the military represent just the tip of the iceberg in terms of what is on the drawing board for protecting warfighters of the future.

The future fighting force will have far superior protective systems that provide enhanced capabilities while imposing less weight on the user, said officials from U.S. Army Soldier Systems Center at Natick, Mass. The center conducts research and product development for all the military services.

Engineers are looking at new materials and composites that offer enhanced protection with less weight, said Robert Kinney, director of Natick's Individual Protection Directorate.

The Marine Corps is fielding a new helmet that, thanks to new materials, offers 6 percent more fragmentation protection and the ability to stop 9 mm rounds, Natick officials said. The helmet, weighing a little more than 3 pounds, [weighs] about a half-pound less than the previous Kevlar helmet, introduced in the early 1980s.

A similar but somewhat streamlined helmet developed by the Army for special operations forces, the modular integrated communication helmet also provides increased ballistic protection. Army officials have expressed "tremendous interest" in fielding the new helmet to other forward-deployed troops, Kinney said.



## IN THE NEWS

Looking a decade down the road, warfighters' helmets are expected to become even more impenetrable to enemy rounds, while offering an array of added protections.

The objective force warrior program integrates thermal sensors, video cameras, and chemical and biological sensors within the helmet. It also includes a visor that can act as a "heads-up display monitor" equivalent to two 17-inch computer monitors in front of the wearer's eyes, said LeeAnn Barkhouse, a business liaison for the program. The program is a "system of systems" the Army is developing for warfighters in 2010 and beyond, she said.

New technology is also improving warfighters' body-armor systems, Natick officials said. The new Interceptor body-armor system is in wide use by soldiers and Marines in Afghanistan and Iraq, where it "is saving lives left and right," Kinney said.

The vest, which the Marine Corps began fielding in late 1999, includes two 4-pound inserts that protect the vital

organs against 9 mm submachine-gun fire at point-blank range, said Dee Townes, project officer for Natick's Marine Corps team. The vest also includes removable flaps that cover the groin, throat, and neck.

Lightweight boron-carbide protective plates make the Interceptor weigh a little more than 16 pounds, compared to 25 pounds for the flak jacket, the previous body armor.

But Natick officials are exploring different materials and composites of materials that will provide increased ballistic protection while shedding as many as 6 more pounds from the vest, Kinney said.

"Sixteen pounds is still too heavy," he said. "Our goal is to get a one-third to one-half reduction in weight. If we can get under 10 pounds, that would [be] more reasonable."

The body-armor system being developed for the objective force warrior program incorporates next-generation

Dutch DeGay, a project engineer for the Objective Force Warrior program, briefs reporters on the Army's prototype combat uniform in the Pentagon on May 23, 2002. The helmet incorporates infrared thermal, day/night video cameras, chem-bio sensors, a global positioning system, broadcast heads-up display, and ballistic protection. The torso garment incorporates body armor and has physiological status monitors that allows the individual soldier, as well as the medics on the battlefield, to know exactly what the individual soldier's physical condition is at any given time. The uniform is suitable for all climate conditions, having the capability of being heated or cooled. The combat uniform is being researched and developed at the U.S. Army's Soldier Systems Center, Natick, Mass. DoD photo by R. D. Ward



boron-carbide ceramic plates that will weigh 10 to 30 percent less than those in the Interceptor, while delivering equal or greater protection.

New construction processes are being explored to shape the plates so they fit more snugly against the chest and spine, said Dutch DeGay, equipment specialist for the program.

Natick officials also plan to replace the 20-plus layers of Kevlar in the Interceptor vest with a new M-5 fiber that will weigh about one-third less, he said.

The self-adjusting vest will position the protective plates about 2 inches from the torso, DeGay said, to reduce chest injuries or bruising in the event that the wearer takes a hit.

"Our goal is to create a protective system that is lower profile, lower bulk, and lower weight," he said. "We want it to be like a second skin, so the warfighter barely even knows that it's there, but that offers the protections needed in a combat environment."

December 3, 2003

## HEADQUARTERS MARINE CORPS/ NAVAL AIR SYSTEMS COMMAND (DEC. 3, 2003)

### V-22 OSPREY REACHES 1,000-HOUR MILESTONE

Ward Carroll

**P**atuxent River, MD—The V-22 recently surpassed 1,000 flight hours flown since the Osprey's return to flight in May '02. Osprey No. 24 got the program past the mark during an icing test flight over Nova Scotia, where a V-22 Integrated Test Team detachment is currently based for the first half of the icing portion of the test plan.

"It's fitting that this milestone was reached by Osprey No. 24 on our crucial icing detachment in Canada," said Air Force Col. Craig Olson, V-22 Joint Program Manager. "We've accomplished what we'd intended at this point since the return to flight, and that is truly a reflection of the teamwork between the program office and integrated test team."

"This milestone represents a year and a half of hard work, successful testing, and mishap-free flying," said Kevin Morgan, V-22 Contractor Flight Test Director. "We've accomplished a lot over the last eighteen months. I couldn't be more proud of the folks at Pax, Edwards,

and New River, and our industry partners at the sites. A lot of people came together to make this milestone happen."

Since the V-22 program's return to flight, the Osprey has gone through exhaustive developmental testing, highlighted by two at-sea periods and a battery of high rate of descent tests that clearly defined the airplane's robust operating envelope and led to Tom Macdonald, the chief corporate test pilot, receiving the Society of Experimental Test Pilot's prestigious Iven C. Kincheloe award. Additionally, the program received important shows of confidence from Department of Defense leadership during the two most recent defense acquisitions boards held at the Pentagon. In the coming months, the program will be focusing on other facets of developmental testing as well as supporting VMX-22, the tiltrotor test and evaluation squadron based at MCAS New River, North Carolina, as it prepares for the Osprey's operational evaluation next year and eventual fleet introduction of the aircraft.

## HEADQUARTERS MARINE CORPS/ MARINE CORPS SYSTEMS COMMAND (DEC. 3, 2003)

### FUTURE AND PRESENT MEET IN UNMANNED GROUND VEHICLES

Capt. Chad Walton, USMC

**M**ARINE CORPS BASE QUANTICO, Va.—Science fiction movies have long used robots as a staple of their regular cast, but even now the Marine Corps is working on a machine that will operate forward of the front lines and provide scouting, flank security, direct attack, and other tasks that will decrease risks for combat Marines.

The Tactical Unmanned Ground Vehicle, or Gladiator, is designed to support dismounted infantry and combat engineers during the performance of their mission, across the spectrum of conflict and range of military operations. The Gladiator will provide the Marine Corps' Ground Combat Element with an unmanned tele-operated/semi-autonomous ground vehicle for remoting combat tasks in order to reduce risk to the warfighter and neutralize threats to the Marine Air-Ground Task Force.

"This system is not intended to replace Marines," said Larry Hennebeck, the Project Officer, who works at Robotic Systems Joint Project Office in Redstone Arsenal, Ala. "The Gladiator will give commanders another alternative to sending out Marines on missions that are very dangerous."

The Gladiator will be capable of performing scouting, surveillance, and target acquisition; direct fire; bunker/light-armor destruction; obstacle breaching; nuclear, biological, and chemical (NBC) reconnaissance; employment of non-lethal weapons; obscurant delivery; engineer reconnaissance; and transporting of ammunition or equipment.

The Gladiator will possess day and night video cameras capable of performing as well as an individual Marine with currently fielded binoculars and thermal imaging equipment; an integrated position locating system and laser rangefinder capable of accurately determining the location of targets; acoustic detection system; and anti-tampering/handling devices.

The operator will direct the Gladiator TUGV from a hand-held unit that controls the various platform/payloads and data reception from the sensors. This will provide the Gladiator with tele-operational capability for remote command and control of the vehicle as well as data display, storage and dissemination.

The Gladiator system will use a modular, plug-and-fight configuration and will be capable of remotely employing a variety of equipment already fielded to infantry and combat engineer units. This equipment includes the Anti-Personnel/Obstacle Breaching System, M240G Medium Machine Gun, M249 Squad Automatic Weapon, Shoulder-Launched Multipurpose Assault Weapon, Light Vehicle Obscuration Smoke System, Automatic Chemical Agent Detection Alarm, AN/VDR-2 Nuclear Detection System, Multipurpose Cart, etc.

"The Gladiator will significantly enhance the ability of Marines to accomplish assigned mission tasks," said Capt. Robert Parks, the Requirement Officer for the system.

During recent Field User Evaluations by 1st Battalion, 2D Marines held at Camp Lejeune, N.C., the Gladiator had a chance to prove its worth. "The Marines were surprised at the numerous ways the system could be used to enhance tactical level operations," said Hennebeck. The Marines of 1/2 will be employing the systems during CAX 3-04 in January.



The Tactical Unmanned Ground Vehicle will fulfill many dangerous missions that can reduce the danger to Marines in some combat situations.

Photo courtesy Marine Corps Systems Command

This system will increase MAGTF capabilities by:

- Reducing Marine casualties by remotizing combat tasks and minimizing risks to individual Marines by eliminating or reducing their exposure to enemy fires, booby traps, or NBC agents.
- Significantly enhancing the ability of tactical commanders to detect, identify, locate, and neutralize a variety of threats to include enemy force activity, chemical and biological agents, and impassible terrain or unusable routes.
- Providing tactical commanders with real-time combat information, enabling real-time maneuver decision-making at the platoon/company level.
- Increasing our ability to operate at a higher tempo due to the increased speed at which we can conduct operations such as obstacle breaching, patrolling, reconnaissance by force, NBC & Engineer reconnaissance, etc.
- Increasing force lethality by being able to acquire and engage the enemy at extended ranges.
- Maximizing Economy of Force efforts by requiring fewer personnel to conduct combat tasks, conserving Marines' strength, and reducing risks in secondary areas/efforts. In this capacity the system will serve as a force multiplier.



## DEPARTMENT OF DEFENSE NEWS RELEASE (DEC. 9, 2003) **MISSILE DEFENSE AGENCY CHOOSES MISSILE TARGET CONTRACTOR**

**T**he Department of Defense announced today that the Missile Defense Agency (MDA) has awarded a combination cost-plus-award-fee and indefinite-delivery/indefinite-quantity contract to Lockheed Martin Space Systems Co., Denver, Colo., for the MDA Targets and Countermeasures Program. The amount awarded today is \$210 million to perform target system engineering, design, and management with a period of performance from December 2003 to December 2007. The contract has a potential period of performance of 10 years and contract value of \$4.6 billion if all options are exercised.

The contract awarded today will provide capability-based targets and countermeasures used to develop, test, and verify ballistic missile defense system performance. These targets allow testing of the missile defense technologies now in development to intercept and destroy incoming ballistic missiles during various times in flight, including the Airborne Laser, the Kinetic Energy Interceptor, the Ground-based Midcourse Defense, the Aegis Ballistic Missile Defense, the Patriot Advanced Capability 3, and the Theater High Altitude Area Defense (THAAD).

Targets and countermeasures will be developed to represent capabilities of ballistic missile threats of the type that could be used in an attack on the United States, our deployed forces and our friends and allies. Due to the technical advances that are sure to be part of ballistic missile proliferation worldwide, it is vital that the United States conduct ground and flight tests against these targets and countermeasures to ensure our missile defense technologies stay ahead of those of our adversaries.

*(News media point of contact is Rick Lehner, Missile Defense Agency, (703) 697-8997.)*

## **AIR FORCE PRINT NEWS (DEC. 11, 2003) OFFICIALS ANNOUNCE EELV CONTRACT AWARD**

**W**ASHINGTON (AFPN)—Air Force officials announced Dec. 10 a contract award to Lockheed Martin International Launch Services for the purchase of one Atlas V Evolved Expendable Launch Vehicle (EELV). The vehicle will launch a National Reconnaissance Office payload from Cape Canaveral Air Force Station, Fla., in 2006.

This was a sole-source contract award to Lockheed Martin, officials said. The Boeing Company was ineligible to compete. Three Boeing integrated defense business units are currently under suspension from competing for government launch contracts.

"This (EELV) will launch a critical national security space capability that will provide information this nation's leaders and warfighters so critically need," said Peter B. Teets. He is the undersecretary of the Air Force and the National Reconnaissance Office director.

The Lockheed Martin Atlas V and Boeing Delta IV are the two families of EELVs developed with the Air Force to modernize and reduce the cost of the nation's space-lift operations while providing the United States with assured access to space, officials said.

## **AIR FORCE PRINT NEWS (DEC. 17, 2003) REPLACEMENTS SOUGHT FOR AGING HELICOPTERS**

*Staff Sgt. Melanie Streeter, USAF*

**W**ASHINGTON—An aging fleet of combat search and rescue helicopters is leading Air Force officials on a quest for a new personnel recovery vehicle.

The HH-60G Pave Hawks that comprise the Combat Search and Rescue (CSAR) helicopter fleet are 14 years old on average. The oldest are 23 years old and have surpassed the 7,000 flying-hour mark. The aging aircraft cannot meet mission requirements, officials said.

"We have some requirements that the HH-60G does not meet," said Lt. Col. Griffith Massey, Air Force chief of CSAR and special operations forces requirements. "The six main areas are speed, range, cabin space, survivability, battlespace awareness, and all-weather operability.

"In addition, the aircraft are aging," Massey said. "They are beginning to cost us significantly more money in terms of maintenance and the manpower to work on them to keep them flying."

A mission needs statement approved by the Joint Requirements Oversight Council (JROC) raised these issues in 1999. It set the stage for acquiring a replacement for the Pave Hawks—the personnel recovery vehicle, or PRV.

A study was conducted, followed by the development of the PRV operational requirements document. The document is now awaiting council approval.

"(The document) at the JROC is a critical step on the timeline," Massey said. "It's required for us to move to the next step."

Though the change will not happen overnight, it is on the horizon, officials said.

"It's something the Air Force has a requirement for and a basic acquisition plan to get to," Massey said. "When we get initial funding, we'll set up a system program office to make this requirement an acquisition program."

The office may be in place as early as the end of fiscal 2004. Initial funding for research and development of the PRV is slated to start in fiscal 2005.

"And then we're looking at source selection, in other words, competition, in the fiscal 2006 timeframe in order to have the contract awarded by the end of 2006, if possible," Massey said.

Several helicopter manufacturers have expressed interest, officials said.

"Eventually, in the fiscal 2012 timeframe, we (will) get the first production deliveries," Massey said. "We're looking for (initial operational capability) in fiscal 2014."

The PRV process may also reveal additional benefits, such as a common helicopter to suit all Air Force requirements.

"Air Combat Command (ACC officials) did a study to determine whether or not a common-helicopter concept would be cost effective and what synergy would come from replacing the UH-1 (Huey) helicopters with something like the PRV," Massey said.

The ACC study found savings of more than \$600 million by using the common-helicopter concept.

Other efficiencies in training and maintenance were also discovered, said Lt. Col. Darryl Blan, Air Force operational training branch chief. By changing from different helicopters to one common airframe modified to fit mission requirements, many training obstacles vanish.

When pilots and maintainers want to change airframes, they must attend formal training for each airframe. With the one-airframe concept, that requirement goes away and the mission-unique training could be accomplished at the operational unit.

The development of a common Air Force helicopter would be a first for the Service. The current fleets of Pave Hawks and Hueys are modifications of helicopters developed for the Army.

### DEPARTMENT OF DEFENSE NEWS RELEASE (DEC. 17, 2003) **DOD LAUNCHES NEW WEB SITE FOCUSING ON TRANSFORMATION**

**W**ASHINGTON—Defense officials continue to improve their public face on the World Wide Web. Beginning today, DoD has a new Web site focused on transformation.

The new site has the same look and feel as the DoD homepage, but concentrates on news in the transformation arena.

"This is another next step in our effort to focus more attention on the Defense Department's priorities," said Chris Willcox, deputy assistant secretary of defense for public liaison. "The first step occurred in October 2001 when DoD introduced its DefendAmerica Web site detailing U.S. efforts in the war on terrorism. The next step came this June when DoD revamped its home page."

Willcox said transformation is so vital to DoD's efforts in the global war on terrorism, as well the department's future in general, it's important to have a separate, focused site.

"There is a lot transformation news out there right now, but it's scattered, and people interested in the topic have to surf many sites to get the total picture. Our goal is to provide that total picture and highlight specific areas in the transformation arena."

Harold Heilsnis, DoD Public Affairs' interim director for Internet operations, explained that the transformation site will highlight the broad range of initiatives in the transformation arena, to include policy, equipment, training, people, and programs.

"Visitors to the site will see the DoD perspective, as well as what the individual services and servicemembers are achieving in the transformation area," Heilsnis said. "There are so many interesting stories to tell in the broad category of transformation. This effort gives us a new venue for getting those stories to both our internal military and civilian audience and to the general public."

The transformation site is located at < <http://www.DoD.mil/transformation> > .

## AMERICAN FORCES PRESS SERVICE (DEC. 17, 2003) **NEW TECHNOLOGIES MAKE LIFE EASIER, SAFER FOR TROOPS ON THE BATTLEFIELD**

Paul Stone

**W**ASHINGTON—A Defense Department-led effort to quickly deliver new technologies to the warfighter is making life easier—and, more importantly, safer—for troops in Iraq and Afghanistan.

"Following the attacks of Sept. 11, we asked ourselves what we in the technical community could do to help," said Ronald Sega, DoD's director of research and engineering. Technology experts then worked with the Services, defense agencies, U.S. Central Command, and U.S. Special Operations Command, he added, to identify their priorities for the war on terrorism.

Sega said that two days after a Sept. 19, 2001, meeting with technology and warfighting experts, they had quickly identified 150 possible projects, which were then narrowed down to those that would make the biggest difference on the battlefield.

"For example, on Sept. 21, 2001, knowing that we would need an effective weapon for the mountains and caves of Afghanistan, we made the decision to go ahead with accelerating development of the thermobaric bomb," he said. "It was in basic chemistry by October. It was in a static test phase in November, and it was flight tested in December. So it was ready for fielding 90 days after we started, and it proved very effective."

Two other projects that were quickly accelerated included a phraselator and a water purification pen.

The phraselator is a paperback-book-sized device that gives non-linguist U.S. troops in Afghanistan and Iraq the ability to communicate with local citizens. Co-developed by the Defense Advanced Research Projects Agency and private contractors, the phraselator uses computer chips to translate English phrases into as many as 30 foreign language equivalents.

Users either speak into the device, which translates the English into the foreign-equivalent phrase, or they can punch a button to call up the desired phrase.

The water purification pen—the size of a miniature flashlight—allows servicemembers to take a local source of water and purify it for drinking.

"Each application of the pen can purify roughly two liters of water, with a total use of roughly 300 liters before it has to be replaced," Sega explained. "It was very popular in Afghanistan, so we accelerated its production for Iraq as well."

More recently, Sega said his office has focused heavily on force protection in Iraq. After consulting with the Services and CENTCOM, he said they concluded that the biggest priority was rushing more armor for humvees and interceptor body armor to the field, which is on track for delivery to warfighters this month.

He said that that armor for humvees provides increased protection for teams patrolling the streets in Iraq, while the interceptor body armor provides better protection



A U.S. Special Forces soldier uses the phraselator device with the debriefing module to determine where enemies have gone, and where weapons and explosives are stored in Iraq during Operation Iraqi Freedom.

DoD Photo



for those on foot patrols, and for all warfighters in general. Indeed, Sega said, the interceptor body armor has repeatedly proven its worth by saving literally dozens and dozens of lives in Iraq.

The body armor is equipped with removable throat and groin protectors, as well as front and back removable plates, which can stop 7.62 mm rounds. It weighs 16.4 pounds; each of the two inserts weighs 4 pounds, and the outer tactical vest weighs 8.4 pounds. Previously issued body armor—the flak jacket—weighed 25.1 pounds and didn't provide the same level of protection.

"The force-protection initiative resulted in other technical options, but what we chose to accelerate was based on input from the field," Sega said. "So when we end up prioritizing items, the warfighter has a big role."

Looking ahead, Sega said warfighters will see increased numbers of counter-mortar radar systems and increased numbers of unmanned aerial vehicles, which have recently been accelerated into production.

"We feel it's very important in the research and engineering community to be looking at ways we can improve the technical capabilities and the tools for the warfighter in the field," Sega said, "and we will continue to do that to enable those who are actually doing the fighting in the global war on terrorism to have the very best we can provide."

## AIR FORCE PRINT NEWS (DEC. 17, 2003) AF IDENTIFIES OPERATIONAL SHORTFALLS

**W**ASHINGTON (AFPN)—Air Force officials released a list of operational shortfalls Dec. 17. The list came from a two-year analysis of current and future warfighting effects and capabilities, a process called a capabilities review and risk assessment.

The assessment identified and prioritized critical operational shortfalls in such areas as:

- Global information grid. There is a need for a globally interconnected capability that collects, processes, stores, disseminates, and manages information on demand to warfighters, policy makers, and support people.
- Battlespace management. There is a need to implement effects-based planning and provide a common operational picture to the warfighter.

- Fleeting and mobile targets. There is a need to reduce the time needed to find, fix, track, and target hostile forces.
- Battle-damage assessment. There is a need for a toolkit and clarified definitions for commanders to determine effects-based decisions across the battlespace.
- Base defense. There is a need to clarify roles and responsibilities between the Air Force and sister Services.
- Cargo airlift. There is a need for a study to review requirements and prepare for possible force-structure changes.

"These are some of the key examples on a corporate list of 50 prioritized capability areas," said Brig. Gen. Stephen Goldfein, director of operational capability requirements. "These priorities present the most significant and immediate Air Force-wide capability objectives."

The assessment, a transition from the old quarterly acquisition program review, is a new review process across six Air Force chief of staff-directed concept of operations areas. The areas include: global strike, global response, homeland security, global mobility, nuclear response, and space and command, control, communications, computers, intelligence, surveillance and reconnaissance.

"This (assessment) will directly impact future Air Force investment strategy through the planning, programming, budgeting, and execution process," Goldfein said.

The Air Force will continue to operationalize capabilities-based planning, both internally and within the joint community.

"This effort will assist these organizations to optimize each Service's role as capabilities are developed for joint application," Goldfein said. "In the next two to three years, we'll work to infuse a 'capability-based culture' into (Department of Defense), joint and Air Force planning. The key to this process is to change from a threat-based, system-by-system requirements process toward an analysis methodology focusing on capability versus individual weapons systems or programs."

## DEPARTMENT OF DEFENSE NEWS RELEASE (DEC. 17, 2003) ADDITIONAL STRYKER BRIGADE ACQUISITIONS APPROVED

**T**he Department of Defense approved plans for the Army to field six Stryker Brigade Combat Teams (SBCT). Secretary of Defense Donald Rumsfeld approved an Army enhancement plan on Dec. 8 that provides for the acquisition of SBCTs 5 and 6. The Army's plan focused on enhancing the aviation, fire support, network, and sensor capability of SBCTs 5 and 6, and retrofitting brigades 1 through 4 with newer technology as it becomes available. The approval gives the Army permission to begin expending funds for the new brigades' acquisition and fielding.

Rumsfeld directed the Army to prepare the plan in a December 2002. The memorandum approved SBCTs 1 through 4, but directed further study of SBCTs 5 and 6 before the Army would receive final approval to field them.

Additionally, the plan reviewed basing options for the brigades and the desirability of associating Stryker brigades with Air Force aerial expeditionary forces to facilitate development of joint doctrine, training, and deployment.

The fifth SBCT, scheduled for fielding in 2006, will be in the 2d Brigade, 25th Infantry Division (Light) at Schofield Barracks, Hawaii. The sixth SBCT, scheduled for fielding from 2008–2010, will be the 56th Brigade (Mechanized), 28th Infantry Division (Mechanized), of the Pennsylvania Army National Guard.

## AIR COMBAT COMMAND NEWS SERVICE (DEC. 19, 2003) B-2 REACHES FULL OPERATIONAL CAPABILITY

*Senior Airman Shawn Clements, USAF*

**W**HITEMAN AIR FORCE BASE, Mo.—The B-2 Spirit reached full operational capability status, Lt. Gen. Bruce Carlson announced Dec. 17 during a ceremony here. The event was marked by the Spirit of Missouri's re-enactment of its first delivery here 10 years ago.

"The B-2 Spirit is combat-proven. It's now officially fully operational," said Carlson, 8<sup>th</sup> Air Force commander. "It does everything we wanted it to—and then some."

The capability status is the ultimate milestone in the development of any new weapon system, signifying ful-

fillment of the original requirements for the equipment, officials said.

"As we've heard, during the 10-year journey to fully operational capability status, the B-2 Spirit flew and fought in three major theater conflicts," Carlson said.

Deploying the aircraft forward for Operation Iraqi Freedom showed the full development of the B-2 team, Carlson said.

"The B-2 shelters, along with a sophisticated sustainment system, made that possible," he said. "Those shelters provided the critical support needed to maintain them. Thanks to all of you here who helped turn this requirement into a reality."

The latest chapter in the history of this base and the history of military aviation began with the arrival of the B-2, said U.S. Congressman Ike Skelton.

"The B-2 changed the calculation of the number of planes per target to the number of targets per plane," Skelton said.

*(Airman 1st Class Nick Martin contributed to this report.)*

## AMERICAN FORCES PRESS SERVICE (DEC. 22, 2003) FALCON PHASE 1 CONTRACTORS SELECTED

*K.L. Vantran*

**W**ASHINGTON—Nine contractors have begun work to place a small satellite or other payload weighing about 1,000 pounds into a low Earth orbit.

The project is part of the Force Application and Launch from the Continental United States, or FALCON, program. Task 1, Phase 1 on the small launch vehicle includes developing conceptual designs, performance predictions, cost objectives, and development and demonstration plans.

Three more contractors have also begun work on the phase's Task 2, hypersonic weapon systems. This includes the common aero vehicle (CAV), the enhanced common aero vehicle (ECAV), and the hypersonic cruise vehicle (HCV).

The CAV will be an unpowered, maneuverable, hypersonic glide vehicle capable of carrying about 1,000 pounds of munitions with a range of about 3,000 nautical miles. The ECAV will offer greater range and im-



A Hypersonic Cruise Vehicle capable of taking off from a conventional military runway and striking targets as far as 9,000 miles away is one of three aerial vehicles under conceptual development under the Defense Advanced Research Project Agency's FALCON initiative.

Image courtesy DARPA

proved maneuverability. The reusable HCV will be an independent aircraft capable of taking off from a conventional military runway and striking targets as far as 9,000 nautical miles away in less than two hours.

The goal of the joint Defense Advanced Research Projects Agency (DARPA) and Air Force program is to develop and validate in-flight technologies that will enable both a near-term (circa 2010) and far-term (circa 2025) capability to execute time-critical, prompt global-reach missions, while at the same time demonstrating affordable and responsive space lift, according to DARPA officials.

Task 1 contractors will receive between \$350,000 and \$540,000 each for their Phase I effort. Task 2 contractors will receive between \$1.2 million and \$1.5 million each. Subject to successful negotiations, each contractor will conduct a six-month system definition study within its respective task, said DARPA officials. At the end of Phase 1, DARPA and Air Force personnel will decide whether to proceed with Phase 2, a 36-month design and development effort.

## AMERICAN FORCES PRESS SERVICE (DEC. 23, 2003) **AGILE TRANSPORTATION FOR THE 21ST CENTURY TO IMPROVE TROOP, SUPPLY MOVEMENT**

K.L. Vantran

**W**ASHINGTON—Troops in the field could reap the benefits of U.S. Transportation Command's information technology initiative, *Agile Transportation for the 21<sup>st</sup> Century*—known as

AT21—as early as May, according to the command's director of operations.

TRANSCOM's mission is to move military supplies, equipment, and people around the world safely and efficiently.

"The concept for AT21 is as old as this command," said Army Maj. Gen. Robert T. Dail. "It embodies many of the technological capabilities required to more rapidly and efficiently move America's military and cargo. It's not only historic, but transformational."

In developing the \$38.9 million program, the general said, the command studied commercial partners and how they embraced supply chain management and distribution execution technologies.

"We have adopted many of these technologies and processes to help us manage the Defense Transportation System," he said. "The focus of the Advanced Concept Technology Demonstration is the development and integration of tools that can help us quickly develop optimal transportation plans for rapidly emerging and changing requirements. These processes will ultimately determine the best method for moving cargo and passengers to points around the globe."

Dail said the vision is to have a single point via the World Wide Web or by phone for DTS customers to request transportation.

Under AT21, the command will consolidate requests into a centralized requirements database, the general said. The database, he continued, would provide cus-



customer relationship management data, customer profiles and customer analytics, which will, ultimately, help the command better serve its customers.

This information will go to a scheduling engine that will help build a strategic distribution plan for moving units and their support worldwide, said Dail. The AT21 solution considers such constraints as weather, routing restrictions, diplomatic clearances, and transportation infrastructure.

One AT21 objective, said the general, is to create a new delivery schedule within 10 minutes of receiving a movement request.

The operations director said today's distribution pipeline often is jammed with unnecessary material that was requested due to the uncertainties of planning or capability to deliver.

"AT21 will improve reliability in delivering troops and sustainment to the regional combatant commander's area of responsibility," said Dail. "The troops on the front line will receive troop and sustainment support more effectively and have more visibility of delivery methods and timelines."

## AMERICAN FORCES PRESS SERVICE (DEC. 24, 2003) **DOD BUDGET REFORMS AID RELATIONSHIPS WITH PRIVATE SECTOR**

*Paul Stone*

**W**ASHINGTON—Transformation of DoD budgetary practices during the past few years is having a rippling effect, reaching far outside the Pentagon and positively influencing how private industry views working with the Defense Department.

That's the assessment of Dov Zakheim, DoD's undersecretary of defense (comptroller) and chief financial officer.

Zakheim, one of the chief architects in the effort to transform DoD budgetary practices, said in a recent interview that private industry—including both established defense contractors and those with whom the department has not traditionally conducted business—now view DoD as a more attractive business partner.

He credits this primarily to changes in the way that DoD programs funding and how it looks at its budget.

Zakheim said the first step he took upon taking office was to streamline the budget process and provide a "degree of consistency that wasn't there before." He explained that the budget process basically was broken down into two parts: the program review, performed by the Office of the Director of Program Analysis and Evaluation, and the budget review, performed by Zakheim's office—two processes that were more independent than integrated at the time.

"The program review traditionally looked at programs—did you want to buy an F-16, as opposed to an F-18, as opposed to an aircraft carrier—and they were decisions made in the summer prior to the start of the new fiscal year," Zakheim explained. "What then happened was we would review the actual budget proposals, and those who didn't get what they wanted in the program review looked at the budget review as a vehicle for overturning prior decisions. And in many cases, that happened. The two reviews did not share a common database, nor did they harmoniously integrate the people who were managing each of the reviews."

Today, all that has changed. Zakheim said that during the past year, the two staffs have become fully integrated, working hand-in-hand to ensure that what happens during the program review does not change in the budget review. "We simply issue a document that confirms, in budgetary terms, the decisions made in programmatic terms," he said.

Another significant change is Zakheim's initiative to examine the budget from a two-year perspective. "This has allowed us to make a commitment not to tamper with financial resources from one year to the next," he explained. "So in effect, what we're doing is carrying forward the full vision of transformation that really began last year."

What this means for those who do business with DoD, Zakheim said, is it gives them an increased sense of security that what DoD commits to invest in one year will not disappear the next. "Industries are always concerned about planning stability," he said. "Corporate planners want to know what their orders will look like next year and the year after that. And by incorporating that (long-term) view into our practices, by minimizing changes, and by building on previous (budgetary) decisions, we're giving industry a better sense of where we're going."

Zakheim used the shipbuilding industry as an example. "Each year we promised that the following year (we) would do something more with shipbuilding. And it's

not unfair to say that the shipbuilding account is more stable than it has been in years," he said. "That's important, because it's a volatile industry in which people move out very quickly if they don't see jobs. They go elsewhere and don't come back. And it's extremely hard and costly to get started back up again."

Transformation of budget practices is also attracting business outside of the traditional defense firms, and Zakheim credits that, in part, to integration of some corporate practices in the DoD budget process.

"My emphasis on having clean audits—financial statements that make sense to the outside world—I believe is helpful," he said. "It shows them that we understand how they do business and it helps them understand us."

As a result, Zakheim said that increasingly more businesses from the high-tech sector are showing interest in doing business with DoD, especially as they recognize how much the department now relies on information-based technologies.

"My colleagues in acquisition and technology have also tried very hard to create a more company-friendly environment so we can attract the leading edge of American business," he said. "And we believe that has begun to occur."

## ARMY AND LEAD SYSTEMS INTEGRATOR TEAM SIGN MAJOR AGREEMENT FOR FUTURE COMBAT SYSTEMS WAY AHEAD (DEC. 11, 2003)

**T**he Army and Future Combat Systems (FCS) Lead Systems Integrator (LSI) team of Boeing-Science Applications International Corporation (SAIC) formalized their baseline plan yesterday for the execution of the FCS Systems Development and Demonstration (SDD) phase by definitizing the Other Transactions Agreement (OTA) signed on May 30, 2003.

Definitization means the contracting parties, represented by the U.S. Army Tank-Automotive and Armaments Command and Boeing, have reached agreement on more precisely defined provisions relative to the scope, schedule, and price for SDD performance.

The definitized Agreement describes efforts to be completed and establishes an upper limit of \$14.78 billion with funds incrementally obligated through FY 2011. By signing this definitized Agreement, the government com-

mits to plan for and provide funding in accordance with the execution schedule. The definitized agreement limits government liability to the amount obligated each year and termination costs, if applicable.

"This is an important step forward toward the Army's Future Force," said Lt. Gen. Joseph Yakovac, Military Deputy to the Assistant Secretary of the Army for Acquisition, Logistics and Technology. "We will now begin to integrate ongoing systems and sub-systems design and development activity into the integrated whole that will be the FCS-equipped Unit of Action.

"The Army-LSI team has worked very hard together to agree on this framework. By this definitizing action, we are taking another major step forward in realizing a key Army Transformation objective. The Army remains satisfied with the LSI's major partner source-selection process from this past summer, and we are confident that we're on the right path," said Yakovac.

During this SDD phase, The Army-LSI team will work with the 23 FCS partners, chosen through an Army-approved competitive process over the summer, to begin the design and development of the first FCS increment.

FCS is a joint, networked-centered "system of systems" that is focused to support the nation's most important system—The Soldier—to give them unprecedented situational awareness that will allow them to see first, understand first, act first, and finish decisively.

FCS is composed of The Soldier, supported by an advanced communications and digital information network that connects 18 manned and unmanned ground and aerial vehicles and sensors and munitions. The FCS program will, over time, replace the majority of units in the Army with 'units of action' equipped with a new family of manned and unmanned ground vehicles and aerial vehicles.

Part of what makes FCS transformational is its adherence to the new DoD Evolutionary Acquisition model of Spiral Development, which allows developers to insert emerging technology as the systems mature over time. Also, the ability to interface with other military services, governmental agencies, and multi-national partners has been built into the FCS network from the ground up, making the system more relevant to regional combatant commanders.

## HEADQUARTERS MARINE CORPS (RELEASED JAN. 5, 2004) LATEST VERSION OF MARINE CORPS' AMPHIBIOUS FIGHTING VEHICLES GOES FARTHER, FASTER

Staff Sgt. Cindy Fisher, USMC

**W**OODBRIDGE, Va. (October 2003)—The Marine Corps' newest expeditionary asset is the latest in a series of vehicles that began with the Roebeling Alligator in 1932. The new vehicle, formerly known as the Advanced Amphibious Assault Vehicle, was recently renamed the Expeditionary Fighting Vehicle (EFV).

In the 20<sup>th</sup> century, the Corps' focus was on amphibious operations, but the 21<sup>st</sup> century focus is shifting to expeditionary operations, said Lt. Gen. Emil R. Bedard, the Deputy Commandant for Plans, Policies, and Operations, Headquarters, Marine Corps, during his speech at the renaming ceremony at the Worth Avenue Technology Center in Woodbridge, Va., Sept. 10. Changing the name of the vehicle reflects this cultural change in the Marine Corps' warfighting concepts.

In other words, "a rose by any other name would still smell like burnt oil and diesel fuel," according to Col. Clayton F. Nans, the direct reporting program manager at the technology center. Nans added that this vehicle,

which is unique to the Marine Corps, has seen a lot of improvements from the original design and better complements the expeditionary nature of the Corps' current warfighting concepts.

The EFV, along with the MV-22 Osprey and the Landing Craft Air-Cushioned, are the future of Marine Corps warfighting, said Lt. Gen. Bedard. "It is about being able to go where we want to go and to be able to go as deep and fast as we need to. (The EFV) is the vehicle that will take us from farther out to sea, to deeper into the heart of the enemy."

The predecessor to the EFV, the Amphibious Assault Vehicle (AAV), has been in service for almost 40 years. The vehicle, which was originally fielded in 1972, has been overhauled and upgraded numerous times throughout its career, but a 1988 Mission Area Analysis determined that it was deficient to meet the Corps' needs in areas such as water and land speed, firepower, armor protection, and system survivability.

"The Marine Corps has always been an expeditionary force," said Charles M. Hall, president of General Dynamics Land Systems, which was awarded the contract to develop and demonstrate the vehicle in February 2001. "This new vehicle's capabilities must surpass pre-



Marines and General Dynamics Amphibious Systems technicians put the Expeditionary Fighting Vehicle (EFV) through rigorous testing to ensure it will meet the requirements mandated by the Marine Corps. The Marine Corps is slated to purchase a total of 1,013 EFVs at a total cost of about 6.7 billion. The first EFVs are expected to be fielded beginning in 2008.

Photo courtesy General Dynamics Amphibious Systems





The Advanced Assault Amphibious Vehicle was renamed the Expeditionary Fighting Vehicle in a ceremony at the Worth Avenue Technology Center in Woodbridge, Va., Sept. 10. The christening of the vehicle reflected both Navy and Marine Corps traditions. To honor the past and look to the future, retired Maj. J.T. Rutherford, a veteran of World War II and four-time representative from Texas, and Lance Cpls. Edward J. Castleberry and Kenneth D. Koonce, both veterans of Operation Iraqi Freedom, christened the vehicle. In keeping with naval tradition, two bottles of water were broken against the ship; the water from one bottle coming from the Pacific Ocean, and the other from the Atlantic Ocean. Photo by Staff Sgt. Cindy Fisher, USMC

vious amphibious vehicles so the Marine Corps can continue to exploit the sea and the land.”

The EFV will exceed the requirements set forth by the Marine Corps, Hall said. “We have demonstrated most of those requirements. The EFV will provide the capabilities necessary for the 21st century Marine.”

The vehicle is expected to exceed the water speed of the AAV by three times; have a land mobility equal to or greater than an M1A1 tank; have increased survivability features over the AAV; provide command and control capabilities to subordinate, adjacent, and higher units; and provide nuclear, biological, and chemical protection for its crew and accompanying troops.

Lance Cpls. Edward J. Castleberry and Kenneth D. Koonce, both AAV operators and veterans of Operation Iraqi Freedom, recently had a chance to put the EFV through some of its paces.

“It’s awesome, absolutely years and years more advanced than what we have now,” said Castleberry, a crew chief with 2<sup>nd</sup> Amphibious Assault Battalion out of Marine Corps Base Camp Lejuene, N.C.

“It is way better than the one we have right now—a lot more firepower and speed,” added Koonce, an AAV crewman based at Marine Corps Base Camp Pendleton, Calif.

“EFV is much more than an Amphibious Assault Vehicle and truly represents a transformational leap in technology and capability beyond any previous Assault Am-

phibian. EFV will be one of the most capable and advanced fighting vehicles ever fielded,” said Gen. Michael W. Hagee, Commandant of the Marine Corps, in a letter to the direct reporting program manager of the EFV program.

The EFV program entered the system development and demonstration phase of the acquisition cycle in December 2000. Since receiving the SSD contract, General Dynamics Land Systems subsidiary, General Dynamics Amphibious Systems has been fabricating and testing the second generation of the vehicle. They have completed three and will build a total of nine of the second generation prototypes and one live-fire test vehicle at the Worth Center facility. They will also develop the low-rate initial production design.

Looking ahead, General Dynamics Amphibious Systems expects to enter into operational assessments in fiscal year 05, according to Hall. Extensive testing of the reliability, survivability, and capabilities of the prototype vehicles will continue throughout the SSD phase.

This is a long-term program and a third generation of the EFV will be developed before it is fielded, said Nans. “We expect to begin fielding the EFV in fiscal year 2008.”

Currently, a total of 1,013—935 EFVP, for personnel, and 78 EFVC, command vehicles—are scheduled to be built and delivered through fiscal year 2018. General Dynamics has selected a Prince William County facility for production of the EFV.

## NDIA TO SPONSOR DEFENSE SYSTEMS ACQUISITION MANAGEMENT COURSE OFFERINGS FOR INDUSTRY MANAGERS

**T**he National Defense Industrial Association will sponsor offerings of DAU's Defense Systems Acquisition Management (DSAM) course to interested industry managers March 8-12, 2004, at the Wyndham Hotel Salt Lake City in Salt Lake City, Utah; June 14-18, 2004, in San Diego, Calif; and Aug. 16-20, 2004, in Denver, Colo. DSAM uses the same acquisition policy information provided to DoD students who attend the Defense Acquisition University courses for formal acquisition certification. It is designed to meet the needs of defense industry acquisition managers in today's dynamic environment, providing the latest information related to:

- Defense acquisition policy for weapons and information technology systems including discussion of the new DoD 5000 series (directive, instruction, and guidebook).
- Defense acquisition and logistics excellence initiatives.
- Defense acquisition procedures and processes.
- The Planning, Programming, and Budgeting System and the congressional budget process.
- The relationship between requirements generation, resource allocation, science and technology activities, and acquisition programs.

For further information, contact Christy O'Hara (703) 247-2586 or e-mail [cohara@ndia.org](mailto:cohara@ndia.org). Prospective government students must first contact Air Force Maj. Jim Ashworth at (703) 805-5809 or e-mail [james.ashworth@dau.mil](mailto:james.ashworth@dau.mil).

## POSITION CATEGORY DESCRIPTIONS & EXPERIENCE, EDUCATION & TRAINING REQUIREMENTS FOR FISCAL YEAR 2004

**R**ichard K. Sylvester, Deputy Director, Defense Procurement and Acquisition Policy (Acquisition Workforce and Career Management) has released the fiscal 2004 approved position category descriptions and career field experience, education, and training requirements. The requirements are effective Oct. 1, 2003.

Unless designated as **DESIRED**, the requirements are **MANDATORY** for certification. The lists also include training requirements that will change during the fiscal year as new courses are deployed; each new course is listed with a projected deployment date. The career fields with projected changes include: Contracting; Industrial/Con-

tract Property Management; Purchasing; and Life Cycle Logistics (Sustainment path).

The descriptions and requirements can be downloaded from the Defense Procurement and Acquisition Policy Web site at <<http://www.acq.osd.mil/dpap>>. Should you have any questions, please contact Karla Merritt at (703) 681-3444 or e-mail [karla.merritt@osd.mil](mailto:karla.merritt@osd.mil).

## NEW INFORMATION TECHNOLOGY (IT) COMMUNITY OF PRACTICE

**T**he Clinger-Cohen Act (CCA) Implementation Community of Practice (CoP) now resides under a broader fledgling CoP on Information Technology (IT). The IT CoP is focused on the IT Acquisition workforce. Other "sub-communities" like CCA and working groups like the IT Functional Integrated Product Team will be joining the IT CoP shortly. Access the IT CoP through the Acquisition Community Connection (ACC) Web site at <<http://acc.dau.mil/simplify/ev.php>>.

## FE-201, INTERMEDIATE FACILITIES ENGINEERING COURSE NOW AVAILABLE

**T**he Defense Acquisition University now offers the Intermediate Facilities Engineering Course (FE-201) as a nonresident, self-paced course available through the Internet. FE-201 is the Level II certification course in the Facilities Engineering career field. Students must pass a final examination within 60 days of the start date. The required prerequisite for this course is ACQ-101.

## NEW PERFORMANCE BASED LOGISTICS (PBL) COURSE

**T**he Defense Acquisition University has announced a new course focused on Performance Based Logistics. LOG-235 is a hybrid course, consisting of a distance learning portion (LOG-235A, prerequisite for 235B) and a resident classroom portion (LOG-235B). LOG-235B is now open for registration; LOG 235A opened for registration on Dec 1, 2003. Those interested in applying should use the DAU registration process at <<http://www.dau.mil/registrar/apply.asp>>. To view the 235B class schedule: <<http://acc.dau.mil/simplify/ev.php>> and click on "235B" under "New PBL Course Offered."

## CHANGE IN LENGTH OF CON-202 AND CON-210

**I**n an effort to be more responsive to the contracting workforce, the Defense Acquisition University has worked to streamline the current CON-202, Intermediate Contracting, and CON-210, Government Con-

tract Law, by reducing redundancies within and across the courses and making more efficient use of class time. These revisions will produce the same levels and quality of learning with less time spent in the classroom. To this end, DAU will soon offer CON-202 in 10 days vice 15 days and CON-210 in 5 days vice 10 days. An added benefit of this streamlining effort will be the potential for students to complete both CON-202 and CON-210 within one three-week block of time since, in many cases, a CON-210 class will be taught immediately after a CON-202 class. These changes will result in some date changes to the current schedule for most of the CON-210 classes. Students currently enrolled in a CON-202 or CON-210 class that will be affected by these changes will be notified in advance. Watch the DAU Web site, < <http://www.dau.mil> > , for the revised class schedules.

### 2004 DEFENSE ACQUISITION UNIVERSITY CATALOG

**T**he FY 2004 Defense Acquisition University Catalog is now available online at the following link: < <http://www.dau.mil/catalog/default.asp> > . The 2004 curriculum lays the foundation for meeting the career-long training and professional development needs of the Acquisition, Technology and Logistics (AT&L) workforce. Every course fits within the framework of the AT&L Performance Learning Model adopted by DAU in 2002, which emphasizes Performance Support, Rapid Deployment Training, Continuous Learning, and Knowledge Sharing.

### ACQUISITION CORPS ELIGIBILITY—ARE YOU READY FOR ACQUISITION AND LOGISTICS EXCELLENCE?

**A**s the DoD transforms, the expectations and opportunities for acquisition professionals will increase by order of magnitude. To prepare for advancement to levels of greater responsibility and authority, acquisition professionals should demonstrate exceptional analytical and decision making capabilities, job performance, and gain qualifying experience. Earning membership into the Acquisition Corps is a critical step in preparation for acquisition leadership. Per the Defense Acquisition Workforce Improvement Act (DAWIA), Acquisition Corps eligibility requires meeting all of the following standards:

- Minimum grade of Major or GS-13
- Acquisition Professional Development Program (APDP) Level II Certification
- A Bachelor's degree at an accredited educational institution

- Four years of acquisition experience
- At least 24 semester credit hours (or the equivalent) of study from an accredited college or university in the following disciplines: accounting, business finance, law, contracts, purchasing, economics, industrial management, marketing, quantitative methods, and organization and management; **or** at least 24 semester credit hours (or the equivalent) from an accredited college in the individual's career field and 12 semester credit hours (or the equivalent) from such an institution from among the disciplines listed here, or equivalent training as prescribed by the Secretary to ensure proficiency in those disciplines.

Acquisition Corps eligibility is a prerequisite for serving in a Critical Acquisition Position (CAP). CAPs are positions of significant responsibility, primarily involving supervisory or management duties in the DoD acquisition system. CAPs vary in scope and span of control, but must be filled by corps members. For more information on acquisition corps eligibility and certification, browse the AT&L Knowledge Sharing System (AKSS) Web site at < <http://deskbook.dau.mil/jsp/DawiaTraining.jsp> > .

### EQUIVALENCY EXAM FOR PMT-250

**D**AU continues to administer an equivalency exam for its Program Management Tools (PMT-250) course. The equivalency exam is intended to provide an opportunity for students who already possess the knowledge contained in the course to demonstrate their proficiency. It is not intended to take the place of the course for students who are not already proficient in the material.

The exam is comprised of seven module areas; students have only one opportunity to take the exam and must obtain a score of 70 percent or higher in all seven module areas to pass. If the exam is successfully completed, the student receives credit for course completion. If the exam is not successfully completed, the student will have to apply for and complete a Web-based offering of PMT-250.

Before applying for the exam, students should ensure they meet one of the following criteria: 1) Certified Level III in career fields other than Program Management (PM) and preparing to enter the PM career field training track to take PMT 352; or 2) Certified Level II in the PM career field prior to Oct. 1, 2001, and will be applying to take PMT-352 at a later date.



### UNIVERSITY OF MEXICO ESTABLISHES PARTNERSHIP AGREEMENT WITH DEFENSE ACQUISITION UNIVERSITY

A strategic partnership between the University of New Mexico and the Defense Acquisition University (DAU) was signed on Nov. 10, 2003. The agreement allows Department of Defense Acquisition, Technology and Logistics workforce members to transfer DAU course credits toward a master's of arts degree in Organizational Learning and Instructional Technologies (OLIT) and a graduate certificate in OLIT.

### ALLIANT INTERNATIONAL UNIVERSITY (AIU) SIGNS LETTER OF INTENT WITH DEFENSE ACQUISITION UNIVERSITY

Dean Dr Mink Stavenga and Assistant Dean Dr. Ali Abu-Rahma, from the United States International College of Business, Alliant International University (AIU) officially signed a letter of intent on Nov. 13 to begin working on a strategic alliance with the Defense Acquisition University (DAU). The DAU West Region was represented by Dean Andy Zaleski and Associate Dean Kevin Carman. Both Universities expect a new collaboration between the campuses, which will result in shared goals and objectives in terms of providing quality education and training to the local DAWIA workforce. They are also planning to share research capabilities and establish an internship program between the two campuses.

### VILLANOVA UNIVERSITY ESTABLISHES STRATEGIC PARTNERSHIP WITH DEFENSE ACQUISITION UNIVERSITY

DAU and Villanova University recently established a strategic partnership agreement, whereby Department of Defense Acquisition, Technology and Logistics (DoD AT&L) workforce members possessing a Level II or Level III Defense Acquisition Workforce Improvement Act (DAWIA) certification, are eligible to receive credit for the Essentials of Project Management course towards Villanova's Master Certificate in Applied Project Management (MCAPM). Completion of any two courses in the Villanova MCAPM program will fulfill requirements for award of the MCAPM.

In addition to the certificate in Project Management, DAU is working with Villanova to add three other certificate programs to the partnership in the near future: Contract Management, Finance and Accounting, and Six Sigma. If you are interested in the MCAPM certificate program, please visit the Villanova Web site at <http://www.villanovau.com/content/DAU.html> for more information.

### UNIVERSITY OF MANAGEMENT AND TECHNOLOGY PARTNERS WITH DAU

DAU signed a strategic partnership with the University of Management and Technology (UMT) on Jan. 6, 2004. This partnership offers significant educational opportunities for the DoD (AT&L) workforce. Under this partnership agreement, multiple DAU courses may be transferred toward master's degrees in management with a major area either in acquisition or project management; a master's degree in business administration (MBA); a bachelor of business administration (BBA) degree; executive certificates in project management and acquisition management; and a graduate certificate in project management.

UMT is chartered by the State Council of Higher Education of Virginia (SCHEV) and accredited by the Accrediting Commission of the Distance Education and Training Council (DETC). UMT is also a Global Registered Education Provider of the Project Management Institute.

To learn more about UMT's registration process and academic programs, call (703) 516-0035 or e-mail [info@umtweb.edu](mailto:info@umtweb.edu).

### ELECTIVE REQUIREMENTS TO OBTAIN CAREER FIELD CERTIFICATION IN FY 2004

The Office of the Director, Defense Procurement and Acquisition Policy has provided clarification of the elective requirement for the Contracting (CON), Industrial and Contract Property Management (IPM), and Purchasing (PUR) career fields.

The CON, IPM, and PUR Functional Advisor, Deidre Lee established a requirement for electives to be completed as part of the certification process. The requirement was codified by Deputy Director, Defense Procurement and Acquisition Policy for Acquisition Workforce and Career Management memorandum, Subject: "Position Category Descriptions and Experience, Education and Training Requirements for Fiscal Year 2004," Release #04-01, dated August 1, 2003.

For the CON and IPM career fields, level I certification requires completion of a single elective; level II certification requires completion of two electives; and level III certification requires completion of two electives. For the PUR career field, level I certification requires completion of a single elective; level II certification requires completion of two electives, and there is no additional training required beyond level II. For all three career fields where an elective requirement exists, employees

must show successful completion of these electives prior to achieving certification. Selected electives are not interchangeable for each level of certification; that is, electives may be used only once for certification purposes.

The purpose of the elective is to provide for job-specific training while preserving managerial flexibility. An elective can be any training opportunity that meets the approval of the employee's supervisor, regardless of subject matter and length of training.

Completed electives will be recorded in the Acquisition Training Application System (ACQTAS) for those civilian AT&L workforce members assigned to the DoD agencies. For military department active duty military and civilians, students should contact their respective Directors of Acquisition Career Management (DACM) for specific elective tracking.

(POC: Cindy Taylor, Deputy DACM, (703) 681-3443 or [ctaylor@doddacm.com](mailto:ctaylor@doddacm.com))

### NEW DAU CONTINUOUS LEARNING MODULES

**T**wo new continuous learning modules are now available at the DAU Continuous Learning Center Site at <<http://clc.dau.mil>>.

**"Leveraging DCMA for Program Success"**—The purpose of this module is to provide details on the DCMA products and services available to a program manager and program management office staff and how these products and services can be utilized to reduce program risk.

**"Wide Area Workflow—Receipts and Acceptance (WAWF-RA)"** is the system that allows DoD to reach its e-invoicing goals and reduce interest penalties due to lost or misplaced documents, and supports DoD's goal of moving to a paperless acquisition process.

The DAU Continuous Learning Center now has 46 modules and over 128,000 registered users.

### AGILE ACQUISITION (DECEMBER 2003) AIR FORCE PEO REALIGNMENT TAKES MAJOR STEPS FORWARD

**T**he realignment of the Air Force PEO structure took major steps forward in December with the combination of two existing PEO offices and moves of two PEO offices from the Pentagon to Air Force product centers in Ohio and Massachusetts.

The moves that occurred were:

The combination of PEO/Fighter-Bomber (PEO/FB) and PEO/Airlift and Tankers (PEO/AT) into a new **PEO/Aircraft (PEO/AC)** with responsibility for all Air Force aircraft acquisition programs except the F/A-22 Raptor and the F-35 Joint Strike Fighter. The new PEO/AC is Lt. Gen. William Looney, who also serves as the commander of Aeronautical Systems Center at Wright-Patterson Air Force Base, Ohio.

PEO/Command and Control and Combat Support (PEO/C2&CS) moved from Washington to Hanscom Air Force Base, Mass. The new PEO/C2&CS is Lt. Gen. Charles Johnson, who also serves as commander of Electronic Systems Center.

A new PEO office, PEO/F/A-22, stood up in Washington. The PEO is Maj. Gen. Rick Lewis, formerly the PEO/FB. In October, the PEO/Weapons moved to Eglin Air Force Base, Fla. Maj. Gen. Robert Chedister is the PEO/WP and continues to serve as the commander of the Air Armaments Center there. The Air Force PEO/Services remains in Washington, as does the PEO for the Joint Strike Fighter.

The PEOs who are dual-hatted as product center commanders, continue to report on acquisition execution to Dr. Marvin Sambur, assistant secretary of the Air Force for Acquisition. Sambur is the Service's senior acquisition executive for non-space programs. In their role as center commanders, they report to Gen. Gregory Martin, commander of Air Force Materiel Command. Each of the three product-center-based PEOs will have a deputy for acquisition (focused on program execution) and a deputy for support (focused on day-to-day operations of the product center).

Dr. James Roche, secretary of the Air Force, and Gen. John Jumper, Air Force Chief of Staff, announced the PEO realignment in July 2003. The plan to move the PEOs to the field is designed to put the top acquisition officials closer to the programs they oversee and to make clearer the lines of responsibility for program execution. By dual-hatting the PEOs as product center commanders, the Air Force is also placing program resources more directly under the control of those responsible for execution.

As part of the plan, the Air Force will, in 2004, realign under the PEOs all acquisition programs currently managed by Designated Acquisition Commanders at the Ser-

vice's three air logistics center. This will free logistics centers commanders to focus more fully on sustainment issues.

### LOGISTICS TRANSFORMATION COURSE NOW BEING OFFERED AT PENN STATE

**T**he U.S. Army Logistics Transformation Agency, in collaboration with Pennsylvania State University's (PSU) Center for Supply Chain Research, has developed a groundbreaking, five-day Logistics Transformation course to provide mid-senior level managers an in-depth overview of ongoing logistics transformation activities, to focus on strategies for mastering change management, and to address the latest supply chain management practices, tools, and trends.

Titled *Logistics Transformation Management—Developing and Accelerating Logistics Change*, it was developed as a result of the institutionalization of logistics transformation in the past year, which established clear-cut goals and objectives, and assigned specific roles and responsibilities throughout the logistics community. It is designed for Process and Product owner representatives, as well as individuals in supervisory, planning, and management positions at the GS-14/15 or O-5/6 levels.

This course leverages the considerable experience PSU has accumulated working with both government and commercial sector clients. It utilizes lessons learned from Operations Enduring Freedom (OEF) and Iraqi Freedom (OIF), which validated logistics transformation requirements for logistics connectivity, improved distribution, demand reduction, and enhanced mobility and deployability.

The inaugural class was held Oct. 27-31, 2003, at the Penn State Campus in State College, Pa. It was moderated by former Deputy Under Secretary of Defense (Logistics and Materiel Readiness) Roger Kallock, with speakers from the private and public sector.

Additional courses are scheduled for spring and summer of 2004. For more information, contact William Koenig/Logistics Transformation Agency/DSN 771-6655/e-mail: [william.koenig@hqda.army.mil](mailto:william.koenig@hqda.army.mil).

### OVERVIEW OF USD(AT&L) CONTINUOUS LEARNING POLICY

**A**cquisition personnel in Defense Acquisition Workforce Improvement Act (DAWIA) billets who are certified to the level of their position must earn 80 continuous learning "points" to meet *Con-*

*tinuous Learning Policy* requirements issued by the USD(AT&L) on Sep. 13, 2002. Continuous learning augments minimum education, training, and experience standards. Participating in continuous learning will enhance your career in several ways:

- Stay current in acquisition functional areas, acquisition and logistics excellence-related subjects, and emerging acquisition policy.
- Complete mandatory and assignment-specific training required for higher levels of DAWIA certification.
- Complete "desired" training in your career field.
- Cross-train to become familiar with, or certified in, multiple acquisition career fields.
- Complete your undergraduate or advanced degree.
- Learn by experience.
- Develop your leadership and management skills.

A "point" is generally equivalent to one hour of education, training, or developmental activity. Continuous learning points build quickly when you attend training courses, conferences, and seminars; complete leadership training courses at colleges/universities; participate in professional activities; or pursue training through distance learning. Continuous Learning points are assigned to distance learning courses <<http://clc.dau.mil>> based on their academic credits or continuing education units. Other activities such as satellite broadcasts, viewing a video tape, listening to an audio presentation, or working through a CD-ROM or Internet course can receive continuous learning points on a 1 point per 1 hour of time devoted to that activity. On-the-job training assignments, intra- and inter-organizational, rotational, broadening and development assignments may also qualify toward meeting the continuous learning standards.

### DEPARTMENT OF DEFENSE EDUCATION GATEWAY

**T**he Department of Defense Education Gateway (EduGateway) Web site at <<http://akss.dau.mil/jsp/DoDProfessionalTraining.jsp>> provides general information about Science, Mathematics, and Engineering (SME) educational programs sponsored in whole or in part by the Department of Defense. Sponsored and funded by the Director of Defense Research and Engineering, the site was originally intended to display information only about programs with science, mathematics, or engineering content. The Web site is now open to any and all genuine educational efforts supported by the Department that knowledgeable members of the DoD family wish to report.





ACQUISITION,  
TECHNOLOGY AND  
LOGISTICS

**THE UNDER SECRETARY OF DEFENSE  
3010 DEFENSE PENTAGON  
WASHINGTON, D.C. 20301-3010**

NOV 12 2003



**MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS**

**SUBJECT: Corrosion Prevention and Control**

The Department of Defense (DoD) acquires, operates, and maintains a vast array of physical assets, ranging from vehicles, aircraft, ships, and other materiel to wharves, buildings, and other stationary structures that are subject to corrosion. Consequently, corrosion control contributes significantly to the total cost of system ownership. To control these costs, I believe we need to revitalize our approach to tracking, costing, and preventing or controlling corrosion of systems and structures. Specifically, we need to concentrate on implementing best practices and best value decisions for corrosion prevention and control in systems and infrastructure acquisition, sustainment, and utilization.

Basic systems design, materials and processes selection, and intrinsic corrosion-prevention strategies establish the corrosion susceptibility of Defense materiel. The early stages of acquisition provide our best opportunity to make effective trade-offs among the many competing design criteria that will provide desired Defense capability. I believe that corrosion needs to be objectively evaluated as part of program design and development activities and the inevitable trade-offs made through an open and transparent assessment of alternatives. Therefore, I want this requirement to be specifically addressed during the earliest phases of the acquisition process and by decision authorities at every level. I will personally consider this issue for programs subject to Defense Acquisition Board (DAB) Review.

I have directed that a review and evaluation of corrosion planning be a standard topic for the Integrating Integrated Product Team reviews and that the Corrosion Prevention and Control Planning be reviewed by the Overarching Integrated Product Team with issues raised by exception to the DAB. To assist all of us in designing effective strategies, corrosion prevention and control planning guidance will be included in the "Designing and Assessing Supportability in DoD Weapons Systems" guide-book. We are also drafting a "Corrosion Prevention and Control Planning Guidebook," which will provide assistance in general corrosion-control planning and the implementation of sound materials selection and treatments during the design, development, and sustainment of DoD weapons systems and infrastructure.

Thank you for your support as we develop a long-term DoD corrosion prevention and control strategy. My focal point for this effort is Mr. Daniel Dunmire, Director, Corrosion Policy and Oversight, at 703-681-3464, e-mail [daniel.dunmire@osd.mil](mailto:daniel.dunmire@osd.mil).

  
Michael W. Wynne  
Acting





**THE UNDER SECRETARY OF DEFENSE  
3010 DEFENSE PENTAGON  
WASHINGTON, D.C. 20301-3010**

November 26, 2003

MEMORANDUM FOR: SEE DISTRIBUTION

SUBJECT: Update to Policy for Unique Identification (UID) of Tangible Items—New Equipment, Major Modifications, and Reprocurments of Equipment and Spares

This policy update to the “Policy for Unique Identification (UID) of Tangible Items—New Equipment, Major Modifications, and Reprocurments of Equipment and Spares,” dated July 29, 2003, will address clarifications including approval of specific Department of Defense (DoD) UID equivalents. Additionally, UID policy guidance continues to be updated in “The Department of Defense Guide to Uniquely Identifying Items, Version 1.3” dated November 25, 2003. This Guide will be periodically updated, and the updates will be available at <http://www.acq.osd.mil/uid>. Each update will supersede the previous version of the Guide, and users will refer to the most current version available for assistance in complying with the UID policy.

A commercial identifier can be considered for use as a DoD UID equivalent if it meets all of these criteria: (1) Must contain an enterprise identifier, (2) Must uniquely identify an individual item within an enterprise identifier, product, or part number, and (3) Must have an existing Data Identifier (DI) or Application Identifier (AI) listed in American National Standard (ANS) MH10.8.2, Data Identifier and Application Identifier Standard. The commercial unique identifiers meeting these criteria that the Department recognizes as UID equivalents are the EAN.UCC Global Individual Asset Identifier (GIAI) for serially managed assets, the EAN.UCC Global Returnable Asset Identifier (GRAI) for returnable assets, and the ISO Vehicle Identification Number (VIN) for vehicles. In addition to these equivalents, the data requirements of 14 CFR Part 45, Identification and Registration Marking, for only aircraft, aircraft engines, propellers, and propeller blades and hubs are consistent with the data elements required by our UID constructs.

The DFARS Interim Rule on “Unique Item Identification and Valuation” was published in the Federal Register on October 10, 2003. One provision of this rule is for contracts to include a requirement for commonly accepted commercial marks if it is determined that unique item identification or a DoD-recognized unique identification equivalent is not required, and unique item identification is not already marked. In these cases where it is not necessary to distinguish between individual items of a product, commercial marks such as the EAN.UCC Global Trade Identification Number (GTIN) (i.e., Universal Product Code (UPC)), ANSI T1.220 COMMON LANGUAGE® Equipment Identification (CLEI) for telecommunications equipment, and the Health Industry Business Communications Council (HIBCC) code for non-pharmaceutical health-care products can be used. These identifiers are not considered DoD UID equivalents but will be accepted by DoD as commonly accepted commercial marks when unique identification is not required.

The following addresses specific implementation issues that have recently surfaced:



a. UID constructs require the use of an Issuing Agency Code (IAC) that identifies the authority that issues enterprise identifiers. The Contractor and Government Entity (CAGE) code presently has no IAC. Efforts to request an IAC for the CAGE code are underway and are awaiting a vote by ISO Sub Committee 31 (SC31), Automatic Data Capture. As part of the request, a liaison between NATO Allied Committee 135, National Directors of Codification, and SC31 is being sought. DoD expects this process to be complete and an IAC for CAGE established no later than March 1, 2004. Until the IAC for CAGE is determined, entities required to provide a UID cannot use CAGE as the enterprise identifier component of the UID.

b. While orders under Basic Ordering Agreements (BOA) are considered to be solicitations, BOAs awarded before January 1, 2004, may not have UID requirements. The UID policy strongly encourages Component Acquisition Executives to incorporate UID requirements into ongoing contracts where it makes business sense to do so. Since BOAs awarded before January 1, 2004, would be an ongoing agreement, UID requirements can be included in orders issued under the BOA whenever the program/item manager determines it is feasible to do so.

c. Purchases initiated by DoD and executed through the General Services Administration (GSA) or another federal agency shall comply with the UID policy.

d. There is only one authorized method to use in solicitations to specify encoding for UID syntax for automatic data capture in order to achieve interoperability in business intelligence. The method is defined in ISO/IEC 15434—Information Technology—Syntax for High Capacity Automatic Data Capture Media. Because ISO/IEC 15434 does not provide a format code for Text Element Identifiers, a DoD UID-approved method of semantics, DoD will accept a format code of “DD” for interim use until a format code for Text Element Identifiers is approved by ISO JTC 1 SC 31.

e. An enterprise is the entity responsible for assigning the unique identifier to an asset. The enterprise identifier of the enterprise that assigned the serial number to the item is the only enterprise identifier in the UID machine-readable code that can use a UID data qualifier for enterprise identifier. The enterprise may be an organization other than the manufacturer, such as a supplier, depot, program manager, or a third party. The enterprise is responsible for ensuring that the serial number is unique within the enterprise identifier (for UID Construct #1) or unique within the original part number (for UID Construct #2).

f. There are three authorized categories of data qualifiers available for use as semantics when encoding the UID syntax. These data qualifiers are:


- Application Identifiers (Format 05 of ISO/IEC 15434)
- Data Identifiers (Format 06 of ISO/IEC 15434), and
- Text Element Identifiers (Format “DD” of the DoD collaborative solution. The DoD collaborative solution is described in Appendix D of the “DoD Guide to Uniquely Identifying Items,” available at <http://www.acq.osd.mil/uid>.)

Data Identifiers and Application Identifiers shall be taken from ISO/IEC 15418, Information Technology—EAN/UCC Application Identifiers and ASC MH 10 Data Identifiers and Maintenance. Text Element Identifiers shall be limited to the minimum set necessary to comply with either UID Construct #1 or #2 and shall be taken from the DoD collaborative solution. The following Text Element Identifiers may be used: CAGE (CAG), DUNS (DUN), EAN.UCC (EUC), Serial Number within Enterprise (SER), Serial Number within Original Part Number (SEQ), Original Part Number (PNO) Current Part Number (PNR), and Unique Identifier (UID).



## POLICY & LEGISLATION

Additional information and the DoD Guide to Uniquely Identifying Items are at <http://www.acq.osd.mil/uid>. The point of contact is Mr. Robert Leibrandt. Please address your questions to him at (703) 695-1099 or by e-mail at [robert.leibrandt@osd.mil](mailto:robert.leibrandt@osd.mil).



Michael W. Wynne  
Acting

### DISTRIBUTION:

SECRETARIES OF THE MILITARY DEPARTMENTS  
CHAIRMAN OF THE JOINT CHIEFS OF STAFF  
UNDER SECRETARIES OF DEFENSE  
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DIRECTOR, DEFENSE RESEARCH & ENGINEERING  
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DEPUTY UNDER SECRETARY OF DEFENSE (LOGISTICS & MATERIEL READINESS)  
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**THE UNDER SECRETARY OF DEFENSE  
3010 DEFENSE PENTAGON  
WASHINGTON, D.C. 20301-3010**

DEC 8 2003

MEMORANDUM FOR ASSISTANT SECRETARY OF THE ARMY (FINANCIAL MANAGEMENT  
AND COMPTROLLER)  
DEPUTY ASSISTANT SECRETARY OF THE ARMY (POLICY &  
PROCUREMENT), ASA(ALT)  
ASSISTANT SECRETARY OF THE NAVY (FINANCIAL MANAGEMENT  
AND COMPTROLLER)  
DEPUTY ASSISTANT SECRETARY OF THE NAVY (ACQUISITION  
MANAGEMENT), ASN(RDA)  
ASSISTANT SECRETARY OF THE AIR FORCE (FINANCIAL  
MANAGEMENT AND COMPTROLLER), SAF/FM  
DEPUTY ASSISTANT SECRETARY OF THE AIR FORCE  
(CONTRACTING), SAF/AQC  
DIRECTORS OF DEFENSE AGENCIES

SUBJECT: Contract Closeout—Quick Closeout Procedures

Contract closeout continues to be a Department of Defense-wide priority. We are making significant progress in reducing the backlog of overage contracts by using a variety of initiatives. Notwithstanding these initiatives, we should ensure we make full use of all the tools available to us.

In this vein, I would like to reemphasize the use of quick closeout procedures as specified at Federal Acquisition Regulation (FAR) 42.708. I understand this procedure is not being used extensively today. Therefore, please remind your contracting officers and supporting teams these procedures are available and should be used when appropriate. I am asking the contract closeout working group to examine these procedures thoroughly and determine if there are constraints which could be removed or minimized to make them more effective. I am also seeking their recommendations for additional incentives to encourage use of this method. I expect the working group to prepare a FAR case to revise the current FAR language at 42.708 as well as its associated contract clauses.

Finally, I also intend to task the contract closeout working group to continue developing and pursuing other initiatives to facilitate contract closeout. If you have any suggestions or ideas on how we can improve the Department's closeout process, please share them with me.

I greatly appreciate your personal attention to this matter. My point of contact for this subject is Mr. Phil Degen. He can be reached at 703-697-8334 or [philip.degen@osd.mil](mailto:philip.degen@osd.mil).

  
Michael W. Wynne  
Acting



**THE UNDER SECRETARY OF DEFENSE  
3010 DEFENSE PENTAGON  
WASHINGTON, D.C. 20301-3010**

DEC 17 2003

MEMORANDUM FOR ASSISTANT SECRETARY OF THE ARMY (ACQUISITION, LOGISTICS  
AND TECHNOLOGY)  
ASSISTANT SECRETARY OF THE NAVY (RESEARCH, DEVELOPMENT  
AND ACQUISITION)  
ASSISTANT SECRETARY OF THE AIR FORCE (ACQUISITION)  
DIRECTORS, DEFENSE AGENCIES

SUBJECT: Acquisition Domain Information Requests

In July 2001, the Secretary of Defense established the Business Management Modernization Program to modernize the Department of Defense's (DoD) business and financial operations. The modernization program is a strategic priority for the Department that needs the complete support of the acquisition community. It promises to streamline the processes, improve data quality to support better decision making, and culminate in a world-class acquisition organization. Your participation in this effort is critical to ensure that the acquisition community's requirements are satisfied by the new operational and systems capabilities.

In the coming months, we will ask the acquisition community for information necessary to understand the current systems, data, and process environment. These information requests will enable us to clearly assess current acquisition capabilities, and determine where capability gaps exist and enhancements are warranted. In addition, this information will support the Acquisition Domain Analysis of Alternatives process and serve as the basis for the analysis that will determine the design of the future acquisition enterprise.

I appreciate your continued support of our modernization efforts and these information requests. My action officer is Ms. Diane Morrison, 703-614-3883, or e-mail at [diane.morrison@osd.mil](mailto:diane.morrison@osd.mil).

  
Michael W. Wynne  
Acting







THE UNDER SECRETARY OF DEFENSE  
3010 DEFENSE PENTAGON  
WASHINGTON, D.C. 20301-3010

DEC 22, 2003

MEMORANDUM FOR SERVICE ACQUISITION EXECUTIVES  
DIRECTOR, DEFENSE LOGISTICS AGENCY

SUBJECT: Implementation of Changes in Acquisition Business Rules

By memorandum, dated April 14, 2003 (attached), I directed the Defense Contract Management Agency (DCMA) to proceed with a time-phased implementation of changes in business rules to limit government source inspections for contracts valued below \$250,000. We are now finalizing corresponding changes to the DoD Federal Acquisition Regulation Supplement to implement the business rules. These changes will focus our contract management resources where they can provide the greatest benefit.

A long-standing criticism of destination acceptance is the time it takes for the payment office to receive acceptance information, causing potential payment delays. Wide Area Workflow (WAWF) is now available to deliver acceptance information electronically, providing a capability for real-time invoicing. Beyond the benefits described in Dr. Zakheim's and my memorandum dated February 6, 2003, full and rapid implementation of WAWF will ensure this change in acquisition business rules produces the positive benefit desired without a negative impact to contractors.

By January 31, 2004, I expect you to have procedures and performance measures in place to ensure only those procurement actions meeting the revised criteria will require source inspection. Please provide your Service/Agency-level implementation plans, including defined measures to gauge the reduction in contracts requiring source inspection, to Mr. Robert Schmitt at DCMA at [robert.schmitt@dcma.mil](mailto:robert.schmitt@dcma.mil), by January 16, 2004. If the source inspection implementation timeframe is not possible, please advise me accordingly.

With regard to WAWF, please provide WAWF deployment and implementation plans to Mr. Will Bishop (Acquisition Domain) at [william.bishop@osd.mil](mailto:william.bishop@osd.mil), with a copy to the Business Initiative Council, Major Michael Cordero, USMC, at [CorderoME@hqmc.usmc.mil](mailto:CorderoME@hqmc.usmc.mil), by January 16, 2004. If security or other concerns preclude implementation of WAWF, submit mitigation strategies addressing your plans to implement electronic invoicing and receiving reports as well as strategies to capture data requirements in support of military equipment valuation and Universal Identification (UID).

  
Michael W. Wynne  
Acting

Attachment:  
As stated

**Editor's Note:** To download a copy of the attachment, visit the Director, Defense Procurement and Acquisition Policy Web site at <http://www.acq.osd.mil/dpap>.



**THE UNDER SECRETARY OF DEFENSE  
3010 DEFENSE PENTAGON  
WASHINGTON, D.C. 20301-3010**

December 22, 2003

**MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS**

**ATTN: SERVICE ACQUISITION EXECUTIVES  
DEPUTY CHIEF OF STAFF (G-4), U.S. ARMY  
DEPUTY CHIEF OF NAVAL OPERATIONS (FLEET READINESS AND  
LOGISTICS)  
DEPUTY CHIEF OF STAFF FOR INSTALLATIONS AND LOGISTICS,  
U.S. AIR FORCE  
DEPUTY CHIEF OF STAFF FOR INSTALLATIONS AND LOGISTICS,  
U.S. MARINE CORPS  
DEPUTY COMMANDER, UNITED STATES TRANSPORTATION  
COMMAND  
DIRECTOR FOR LOGISTICS, THE JOINT STAFF (J-4)  
DIRECTOR OF DEFENSE AGENCIES**

**SUBJECT: Migration to the Defense Logistics Management Standards (DLMS) and  
Elimination of the Military Standard Systems (MILS)**

Effective immediately, use of MILS is restricted in any new logistics system investment program. This direction requires aggressive action by the Components to eliminate the generation and transmission of logistics transactions using the 80-character MILS formats. Replacing MILS with emerging information exchange conventions in the Department of Defense (DoD) Logistics domain, including the business processes in the DoD 4000.25 series of manuals, will accelerate the Integrated Logistics Enterprise (ILE) by enacting best business practices.

MILS provided the backbone of cross-functional interoperability between organizations and systems for over 40 years. However, the data-limited MILS Electronic Data Interchange (EDI) transmission media are now impediments to our business transformation goals. Rigid fixed-length EDI formats are functionally constraining, technologically obsolete, and unique to DoD. Our ability to transform our operations to best practices, employ commercial standards, and achieve the ILE is at risk. As long as MILS forms the basis of our information exchanges, it will not be possible to track an item throughout its life cycle across the entire supply chain using Unique Identifiers (UIDs).

The Defense Logistics Management Standards Office (DLMSO) is the Department's Executive Agent (EA) for logistics data interchange. DLMSO manages the business rules, data standards, and information exchange media for the logistics community in accordance with DoDD 8190.1, DoD Logistics Use of Electronic Data Interchange (EDI) Standards, dated May 5, 2000. DLMSO is responsible for developing, publishing, and updating the Defense Logistics Management System (DLMS) to take advantage of best interchange business practices and eliminating outmoded methods such as MILS. The DLMS is founded on American National Standards Institute (ANSI) Accredited Standards Committee (ASC) X12 standards and include both X12 transactions and World Wide Web Consortium (W3C)-compliant Extensible Markup Language (XML) schemas. DLMSO demonstrated that DLMS supports information exchanges using XML schemas as well as ANSI ASC X12. These information exchange



media can support the unique tracking of items throughout the supply chain using the UID, as well as any other supply chain process improvements.

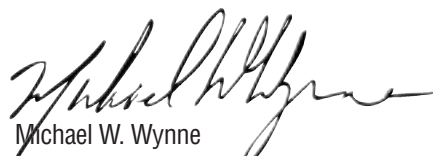
DoD Logistics must posture all systems to use new and expanded information exchange capabilities and adopt best business practices. This policy memorandum requires each of you to take immediate action to accept and transmit business transactions using only the DLMS. Accordingly, we direct the following policies:

- Effective January 1, 2004, no new or developing DoD logistics systems shall use either MILS formatted messages, or MILS messages wrapped with XML headers/tags, for information interchanges in support of business processes covered by the DoD 4000.25 series of manuals.
- Effective by close-of-business December 31, 2004, MILS formatted messages shall no longer be used within or between DoD systems.
- Effective January 1, 2005, all information exchanges among DoD systems shall use the DLMS ANSI ASC X12 or equivalent XML schema for all business processes supported by the DoD 4000.25 series of manuals.

Addressees shall certify that all applicable systems are in compliance with the above policy or report those specific systems that are not or will not be in compliance by January 1, 2005. These certifications or reports of noncompliance shall be delivered to me no later than September 15, 2004. Funding will be withheld from systems that are in noncompliance.

The Deputy Under Secretary of Defense for Logistics and Materiel Readiness, DUSD(L&MR), will initiate action to ensure that DoDD 8190.1 is consistent with this memorandum's policy. No later than February 28, 2004, addressees shall submit their draft plans for migration of their systems to the DLMS, elimination of the MILS, and incorporation of the UID in application system databases. The content of those plans is outlined in the attached guidance. A UID Users Workshop will be held in March 2004 to assist you in finalizing your plans and to begin the process for developing business process rules to capitalize on the UID marking. Additional detailed information on the workshop will be forthcoming. Final migration plans are to be submitted by April 16, 2004. Draft and final plans shall be sent to the DUSD(L&MR) point of contact (POC) identified below.

Please provide name, organization, phone number, and e-mail address of your point of contact by January 15, 2004. My POC is Mr James A. Johnson, Director, DLMSO, telephone at (703) 767-0670, e-mail at [ja.johnson@dla.mil](mailto:ja.johnson@dla.mil).



Michael W. Wynne  
Acting

Attachment:  
As stated

**Editor's Note:** To download a copy of the attachment, visit the Director, Defense Procurement and Acquisition Policy Web site at <http://www.acq.osd.mil/dpap>.



## POLICY & LEGISLATION



OFFICE OF THE UNDER SECRETARY OF DEFENSE  
3000 DEFENSE PENTAGON  
WASHINGTON, D.C. 20301 - 3000

DEC 8 2003



DPAP/EB

MEMORANDUM FOR DIRECTORS OF THE DEFENSE AGENCIES  
DEPUTY ASSISTANT SECRETARY OF THE ARMY  
(POLICY AND PROCUREMENT), ASA(ALT)  
DEPUTY ASSISTANT SECRETARY OF THE NAVY  
(ACQUISITION MANAGEMENT), ASN(RD&A)  
DEPUTY ASSISTANT SECRETARY OF THE AIR  
FORCE (CONTRACTING), SAF/AQC  
EXECUTIVE DIRECTOR, ACQUISITION, TECHNOLOGY AND  
SUPPLY DIRECTORATE (DLA)  
DIRECTOR, ADMINISTRATION AND MANAGEMENT

SUBJECT: Inclusion of Defense Base Act Clause in DoD Overseas Contracts

It has come to my attention that there may be some inconsistency within the Department regarding the inclusion of the **Workers' Compensation Insurance (Defense Base Act)** clause at FAR 52.228-3 in our contracts to be performed outside of the United States. This clause, which is prescribed by FAR 28.309(a), requires contractors to provide the workers' compensation insurance mandated by the Defense Base Act (42 U.S.C. 1651, *et seq.*) for their overseas workers. FAR 28.305 provides additional implementing guidance on this subject, including a definition of the key term "public-work contract."

I want to emphasize that the **Workers' Compensation Insurance (Defense Base Act)** clause at FAR 52.228-3 **should be included in all DoD service contracts to be performed (either entirely or in part) outside of the United States, as well as in all supply contracts that also require the performance of employee services overseas.** This is consistent with the very broad definition of "public-work contract" at FAR 28.305, which would include virtually all DoD contracts for construction, repair, or any other national defense-related service performed overseas.

In addition, while FAR 28.309(b) prescribes inclusion of the **Workers' Compensation and War Hazard Insurance Overseas** clause at FAR 52.228-4 when the Secretary of Labor has waived the applicability of the Defense Base Act, such waivers are granted only for foreign nationals hired outside of the United States. Even when a waiver has been granted, **both** of the clauses at FAR 52.228-3 and 52.228-4 should be included in DoD service or supply contracts if any contract services will be performed overseas by employees to whom the waiver does not apply, such as United States citizens or foreign nationals hired within the United States.

Please ensure that this memorandum is widely disseminated within your organizations. Questions may be directed to Mr. Christopher Werner of my staff at (703) 695-9764 or [Christopher.Werner@osd.mil](mailto:Christopher.Werner@osd.mil).

Deidre A. Lee  
Director, Defense Procurement  
and Acquisition Policy



UNDER SECRETARY OF THE AIR FORCE  
WASHINGTON

OCT 6 2003



MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS  
CHAIRMAN OF THE JOINT CHIEFS OF STAFF  
UNDER SECRETARY OF DEFENSE (ACQUISITION,  
TECHNOLOGY AND LOGISTICS)  
UNDER SECRETARY OF DEFENSE (INTELLIGENCE)  
ASSISTANT SECRETARY OF DEFENSE (NETWORK  
INFORMATION INTEGRATION)  
DIRECTOR, OPERATIONAL TEST AND EVALUATION  
DIRECTOR, PROGRAM ANALYSIS AND EVALUATION

SUBJECT: National Security Space (NSS) Acquisition Policy 03-01

The NSS Acquisition Policy 03-01 falls under the authority of DoD Directive 5000.1 and will be used for DoD Space Major Defense Acquisition Programs, replacing processes and procedures described in the DoD Instruction 5000.2 under the jurisdiction of the Under Secretary of Defense for Acquisition, Technology and Logistics (USD-AT&L). I am authorizing the release of the NSS Acquisition Policy 03-01 as final guidance for defense space systems. It supersedes the NSS Acquisition Policy Interim Guidance, issued 26 Feb 03 and is effective immediately.

CC:  
AF/CC  
AF/CV  
SAF/AQ

**Editor's Note:** To download a copy of the new NSS Acquisition Policy 03-01, go to the Office of the Secretary of the Air Force, Directorate of Space Acquisition Web site at <<http://www.safus.hq.af.mil/usa/index.html>>.

## AIR FORCE PRINT NEWS (NOV. 20, 2003) SPACE ACQUISITIONS POLICY CHANGES

Staff Sgt. Melanie Streeter, USAF

**W**ASHINGTON—Air Force leaders announced a change in space acquisitions policy at a Senate Armed Services subcommittee meeting Nov. 18.

Undersecretary of the Air Force Peter B. Teets and Lt. Gen. Brian Arnold, Space and Missile Systems Center commander, testified before members of the strategic forces subcommittee.

“When I first took this job almost two years ago, I recognized we had problems with national security space acquisitions,” Teets said. “I wanted an independent and expert review of (the process), and recommendations on how to fix any issues the review found.”

Members of the Defense Science Board and Air Force Scientific Advisory Board formed a panel to look into the process, Teets said.

“According to the study, mission success should be the guiding principle in all space systems acquisitions,” Teets said.

The new policy, NSS 03-01 [**Editor’s note:** See *preceding page*], specifically states mission success as the No. 1 principle behind all NSS programs, and all program activities must be driven by that objective, Teets said.

Several of the panel’s recommendations dealt with cost estimation and program budgeting practices, Teets said. In response, the new policy requires an independent cost analysis to be conducted before each key decision point in the process.

The purpose of the assessment is to identify and quantify program risk areas and to advise the milestone decision authority on a program’s readiness to move to the next acquisition phase, Teets said.

Another recommendation focused on earlier reporting of problems, Teets said.

“In our research behind (the new policy), we found that space programs have a different funding curve than most typical (Department of Defense) weapons systems,” Teets said. “A space-based system spends most of its budget up front, well before deployment, and

spends a great deal less on the sustainment phase of the life cycle.”

To solve this problem, Teets said big decisions need to be made earlier in the life cycle of the program, before the majority of the money is spent. “(The new policy) moves the key decision points up for this very reason,” Teets said. “Early identification allows us to take timely corrective action.”

## UNIQUE ITEM IDENTIFICATION AND VALUATION (DFARS CASE 2003-D081)

**D**oD published the following DFARS change in the *Federal Register* on Dec. 30, 2003, to become effective on Jan. 1, 2004:

### Interim Rule:

Requires contractors to provide unique identification for items delivered to DoD, through the use of item identification marking. Also requires contractors to identify the government’s unit acquisition cost for all items delivered. Unique identification and valuation will enable DoD to consistently capture the value of the items it buys, control these items during their use, and combat counterfeiting of parts. Additional information on DoD’s unique identification policy can be found at < <http://www.acq.osd.mil/uid> > .

This DFARS rule replaces the interim rule published on Oct. 10, 2003 (DFARS Change Notice 20031010), and applies to all solicitations issued on or after Jan. 1, 2004. The *Federal Register* notice for this rule is available at < <http://www.acq.osd.mil/dp/dars/dfars/changes.htm> > . The notice solicits public comments, which are due by March 1, 2004.

## TYPE CLASSIFICATION PROPONENT

**T**he next revision of AR 70-1, Army Acquisition Policy, has an expanded and detailed discussion concerning the Type Classification (TC) process. The Army uses this critical process to determine that materiel is ready for production prior to spending procurement funds on an acquisition program. Although the TC process is currently detailed in AR 70-1, propensity has been assigned to the Deputy Assistant Secretary of the Army (Integrated Logistics Support), Director of Integrated Logistics Support, (SAAL-LP). Future policy documents will reflect this change.

(Don Crissup/SAAL-LP/DSN 664-7421/[donald.crissup@saalt.army.mil](mailto:donald.crissup@saalt.army.mil))



### U.S. ARMY PEO ENTERPRISE INFORMATION SYSTEMS (PEO EIS) INDUSTRY DAY

**T**he U.S. Army Program Executive Office Enterprise Information Systems (PEO EIS) and the the Armed Forces Communications-Electronics Association (AFCEA) Belvoir Chapter/Federal Business Council, will sponsor the second PEO EIS Industry Day March 17-18, 2004, at the Sheraton National Hotel in Arlington, Va.

Industry Day will provide a forum for PEOs to highlight their key role in Army Transformation—focusing on contemporary information technology initiatives. Project and Program Managers (PMs) will be sharing their vision and goals with their industry counterparts in areas of process improvement and strategic movement to a well-connected Objective Force. This years theme will be “Integrating IT for Warfighters.” For details and online registration, go to < <http://my.eis.army.mil/pws/index.htm> > .

### 2004 INTEROPERABILITY AND SYSTEMS INTEGRATION CONFERENCE

**T**he 2004 Interoperability and Systems Integration Conference will be held March 22–25, 2004, at the Hyatt Regency Denver, Denver, Colo. The call for papers and the advanced conference announcement will be mailed in the near future and will be available for viewing at < <http://www.ndia.org> > .

### AIR FORCE 2004 ACQUISITION TRAINING MANAGERS CONFERENCE

**S**AF/AQXD will be sponsoring the 2004 Acquisition Training Managers Conference on March 23–26, 2004, at the Southbridge Hotel & Conference Center in Southbridge, Mass. This conference is a chance for all Air Force acquisition training managers to get hands-on computer training on all of the acquisition tools available to Air Force acquisition training managers and to the acquisition workforce. This year's conference will focus on Continuous Learning. Check the Conference Web site at < [http://www.safhq.af.mil/acq\\_workf/training/conference/index.htm](http://www.safhq.af.mil/acq_workf/training/conference/index.htm) > for more information and updates.

### DTIC ANNUAL USERS MEETING AND TRAINING CONFERENCE

**T**he 30th annual meeting of the Defense Technical Information Center (DTIC) user community returns to the ambience of Old Town Alexandria, Va., March 29–April 1, 2004. Past participants have typically included technical information careerists as well as DTIC customers, including scientists, engineers, and

professionals in the federal technology research, development, information science, and acquisition communities. Conference participants represent the Department of Defense, other federal agencies, their contractors, and potential contractors.

The agenda will squarely address changing information sources and technologies in support of research, development, test, and engineering programs. There will be training sessions with up-to-date background to help you keep pace with rapidly changing Defense needs in the technical information environment. Government and commercial exhibitors will be on-hand to demonstrate their latest information technologies. With a variety of speakers and sessions on topics of current interest and controversy, you will be able to meet the experts, ask questions, and express opinions.

More specific details will be posted as they are developed at < <http://www.dtic.mil/dtic/annualconf/> > . Registrations will be available online after Jan. 5, 2004. For more information contact DTIC's Conference Coordinator at: (703) 767-8236, DSN 427-8236, DSN 427-8236, or e-mail [confinfo@dtic.mil](mailto:confinfo@dtic.mil).

### DOD ADVANCE PLANNING BRIEFING FOR INDUSTRY (APBI) CHEMICAL BIOLOGICAL DEFENSE

**T**he Joint Program Executive Office for Chemical Biological Defense (JPEO-CBD) will host a DoD Chemical Biological Advance Planning Briefing for Industry (APBI) on April 6–7, 2004, at the Kossiakoff Center, Laurel, Md. The APBI will include details on the Joint Service mid- and long-range research, development, test, and evaluation (RDT&E) plans and programs, future production projections, and emerging military doctrine. For questions regarding the 2004 Chem Bio APBI, please call Angie Gress at (703) 247-2568 or send an e-mail to [agress@ndia.org](mailto:agress@ndia.org).

### NATIONAL CONTRACT MANAGEMENT ASSOCIATION—WORLD CONGRESS 2004

**R**egister today for the National Contract Management Association's annual conference—World Congress 2004, April 26–28, at the Renaissance Orlando Resort at Seaworld in Orlando, Fla. This extensive program offers educational and training opportunities to a wide range of contract management professionals in the commercial, government, and international communities.

Participate in an event that will change the face of business. World Congress offers:

## CONFERENCES, WORKSHOPS & SYMPOSIA

- Networking Opportunities
- Career Center
- Expanded Exhibit Hall with Vendor Demonstrations
- Pre-conference Workshops
- 12 Concurrent Track Sessions.

Exhibit and sponsorship opportunities are available now. For more details, please visit the World Congress Web site at <<http://www.ncmahq.org/meetings/WC04>> or e-mail us at [meetings@ncmahq.org](mailto:meetings@ncmahq.org).

### 40TH GIDEP WORKSHOP AND INFORMATION SHARING CONFERENCE

**T**he Government-Industry Data Exchange Program (GIDEP) in conjunction with the GIDEP Industry Advisory Group (IAG) is pleased to announce its 40<sup>th</sup> Workshop and Information Sharing Conference to be held at the Sheraton Society Hill in Philadelphia, Pa., May 18-20 2004. The theme for the conference is "Networking for Solutions."

The Workshop provides an excellent opportunity for learning what GIDEP has to offer, how to derive benefits from using the program, and networking with members of the GIDEP community. Tuesday and Wednesday mornings will focus on government and industry "scenario-based" presentations respectively. During Tuesday and Wednesday afternoons, a mini version of the GIDEP annual Clinic will be offered. Thursday the 20<sup>th</sup> will be dedicated to diminishing manufacturing sources and material shortages (DMSMS) topics.

Speakers include: Dr. Michael A. Greenfield, associate deputy administrator for technical programs, NASA Headquarters; Dr. Michael Stamatelatos, director, safety and assurance requirements division, Office of Safety and Mission Assurance, NASA Headquarters; Rick L. Malone,

vice president, mission success, Lockheed Martin Space Systems Company Space and Strategic Systems; John Becker, staff specialist, assistant deputy under secretary of defense for supply chain integration.

For complete information and online registration visit the GIDEP Web site at <<http://www.gidep.org>>. To contact the GIDEP operations center call 909-273-4677.

### DEFENSE PROCUREMENT CONFERENCE

**T**he Defense Procurement Conference, sponsored by the Office of the Director, Defense Procurement and Acquisition Policy, will be held May 25-28, 2004, in Orlando, Fla. Attendance is by invitation only. More information will be posted as it becomes available at <<http://www.acq.osd.mil/dpap/Conferences/index.htm>>.

### FEDERAL ACQUISITION CONFERENCE & EXPO (FACE) 2004

**T**he Federal Acquisition Conference & Expo (FACE) 2004, sponsored by the Federal Acquisition Council and General Services Administration, is a forum for acquisition professionals and policy makers to share their insights and experiences. This year's event will be held in Washington, D.C., on June 2-3, and Dayton, Ohio, on June 22-23. FACE provides a full range of training on the latest acquisition issues and an opportunity to review exhibitors' products and services. Attendees receive Continuous Learning Points. The 2004 winners of two prestigious acquisition awards will also be announced: Procurement Round Table Elmer Staats Award and the Ida Ustad Award. For more information on the conference, watch for updates on the Federal Acquisition Council Web site at <<http://www.fac.gov>>.

## Joint Program Working Group

**O**n Nov. 18 and 19, 2003, the Joint C4ISR Decision Support Center (DSC) held a Joint Program Working Group (JPWG). The JPWG was sponsored by Dr. Nancy Spruill, Director, Acquisition Resources and Analysis, Office of the Under Secretary of Defense (Acquisition, Technology and Logistics), and John Landon, Office of the Assistant Secretary of Defense (Networks and Information Integration). Virginia Wiggins of the DSC led the JPWG, and Bill McGovern of the Defense Acquisition University (DAU) acted as facilitator. The two-day event was hosted by DAU in the Management Deliberation Center at Fort Belvoir and

was attended by 20 representatives from 15 separate joint programs.

The purpose of bringing the joint program managers together with the DAU was to identify common joint program management issues and provide recommendations to resolve those issues to DoD senior leadership. Through prior studies and analysis, the DSC and other DoD components have recognized that Service-centric acquisition and requirement processes do not work for joint programs and actually create impediments to success.

The DSC has identified specific critical characteristics of a successful program that include:

- Single program manager
- Authority matches responsibility
- Single acquisition executive
- Funding authority
- Well understood issue resolution process

Highlights of the JPWG included:

- Presentation on the updated Defense Acquisition Framework (DoD 5000 Series) and new Joint Capabilities Integration and Development System (JCIDS).
- Progress report on updating the 1996 *DoD Joint Program Manager Handbook*.
- Individual presentations from each joint program office in attendance on their mission, programs, and joint management issues.
- A brainstorming session with select focus groups that identified specific issues and formulated recommendations for resolving problems related to culture, oversight, personnel and training, policy and statute, as well as requirements.

Working Group findings were recorded and placed on the new Joint Program Working Group Web site that is part of the Acquisition Community Connection at < <http://acc.dau.mil> > . The Web site is currently set up for those who attended and will be expanded for those in other joint programs who wish to participate in the Joint Program Community of Practice.

Some specific issues identified were:

- Lack of and/or poor definition and control of joint requirements; acquisition approval process allows blockage of joint requirements by single military service (e.g., resource withdrawal, veto, etc.).
- Distrust between military services causing parochialism and competition and affecting decisions regarding requirements, funding, personnel and staffing, and management.
- Poorly defined, documented, and enforceable roles and responsibilities at the OSD, joint, Service, and agency levels result in inefficient and sub-optimal program execution. Problems are created by conflicting direction, inconsistent communication, and inter-organizational disputes.

JPWG-03 was conducted in a non-attribution environment. The program offices were allowed to make comments openly on where improvements could be made to improve the process, which will ultimately benefit the end-user, the joint warfighter.

The lessons learned will be incorporated into an update of the 1996 *DoD Joint Program Management Handbook*.

It is anticipated that the Joint Program Working Group and DAU will continue their efforts to develop ways to improve joint acquisition processes. The plan is to expand the forum and meet periodically with ongoing joint programs to provide an avenue for evolving the joint processes that will deliver joint capabilities faster and better.

## PEO/SYSCOM Commanders Conference

### 2003 PEO/SYSCOM COMMANDERS CONFERENCE TRANSFORMING ACQUISITION, TECHNOLOGY, AND LOGISTICS TO COMBAT FUTURE THREATS IN UNCONVENTIONAL ENVIRONMENTS

Marcia Williams

**T**he 2003 Program Executive Officer/ Systems Command (PEO/SYSCOM) Commanders Conference was held at the Defense Acquisition University (DAU) facilities, Fort Belvoir, Va., Dec. 3-5, 2003. This annual conference brought together approximately 400 senior leaders in the Department of Defense Acquisition, Technology, and Logistics community and their industry counterparts.

Acting Under Secretary of Defense (Acquisition, Technology and Logistics) Michael W. Wynne hosted the 2003

conference on "Transforming Acquisition, Technology and Logistics to Combat Future Threats in Unconventional Environments."

The first day featured an afternoon of special topic sessions, which included a host of former and current initiatives critical to the accomplishment of the acquisition, technology and logistics mission in DoD. Special sessions included "Contracting Challenges in an Evolutionary Acquisition Environment," "Earned Value Management," "DFARS Transformation—the Next Evolution," and related subject matter issues.

In the official opening ceremony on the second day, Wynne provided an overview of many of the issues and challenges facing the DoD and industry today, highlighting the importance of the roles each of the attendees and organizations played in supporting the warfighter.



The opening day also saw a keynote address by Marine Lt.Gen. James E. Cartwright and three informative panel sessions: "Enabling Technologies Supporting the Warfighter," "The Human Capital Crisis—What are DoD and Industry Doing About It?" and "Aligning the DoD 5000 Instruction and JCIDS: Implementing the Chairman's New Capabilities-based Process for Identifying and Satisfying the Warfighter's Needs."

Attendees also heard a luncheon presentation on homeland security by Dr. David F. Bolka, director, Homeland Security Advanced Research Projects Agency. Bolka provided a summary overview of many of the operations homeland security is involved in and its expanding relationships with the DoD.

The final day of the conference included a presentation on "Small Business, A Useful Tool for the Program Manager" and two panels: "What Does the Warfighter Really Want?" and "Partnerships and Alliances with Industry: Non-Traditional Business Requirements in Unconventional Environments."

The conference included multiple displays and exhibits of the latest technology initiatives in DoD, including spectrum management, corrosion control, unique identification, and E-BIZ. To view more information on the conference, visit < [www.peosyscom.com](http://www.peosyscom.com) > .

## Air Force Contracting E-Business Workshop

### STANDARD PROCUREMENT SYSTEM PLAYS CENTRAL ROLE IN DEPARTMENT'S E-BUSINESS GOALS

**D**uring a three-day workshop in November, senior leaders from Air Force acquisition, the Standard Procurement System (SPS), and other defense agencies met with more than 200 contracting professionals from around the world who had gathered to participate in the Air Force's 2003 Contracting E-Business Training Workshop in Orlando, Fla. The Workshop focused on the big picture of e-business in the Department of Defense (DoD) and in the Air Force; the second day drilled down to the role of SPS in e-business. Additionally, the Workshop offered a host of functional and technical break-out sessions as well as vendor and other related exhibits.

#### The Big Picture

Charlie Williams Jr., Deputy Assistant Secretary for Contracting, Office of the Assistant Secretary of the Air Force for Acquisition, delivered the keynote address. He spoke about change acceptance and the role of Air Force procurement in supporting Warfighters in the field through strategic sourcing.

Later, Tom Bayless, Director of the Air Force Contracting Information Systems (AFCIS) Program Office, spoke about the role of the Air Force and the Acquisition Domain in



Charlie Williams Jr. (right), Deputy Assistant Secretary for Contracting, Office of the Assistant Secretary of the Air Force for Acquisition, talks with Brig. Gen. Bradley Butler, Deputy Chief Information Officer for the Air Force, during a break at the Workshop. DoD Photo

DoD's Enterprise Architecture (EA). Bayless was followed by Luncheon Speaker Brig. Gen. Bradley Butler, Deputy Chief Information Officer (CIO) for the Air Force, who works with CIOs from the Army, Navy, and other defense agencies to effect EA at the DoD level.

### Strategic Sourcing, Enterprise Architecture, and SPS

Day Two of the Workshop tied it all together. "As the only standard business system in DoD, SPS is critical to the Department's ability to enable an effective EA which will, in turn, enable strategic sourcing across DoD," said Army Col. Jake Haynes, SPS Program Manager.

### DAU President Talks Training

On the third day of the Workshop, Defense Acquisition University President Frank Anderson spoke about the changes in acquisition training strategy, primarily the

### Strategic Sourcing Benefits

- Leverage and Cost Reduction
- Risk Reduction
- Improved Performance and Cycle Times
- Price Stability

growing role of non-traditional classroom training. Non-traditional classroom training can encompass a variety of training methodologies, including Web-delivered courses, computer based training (CBT) modules, and virtual classrooms.

For more information, go to < <https://afcis.ssg.gunter.af.mil> > and follow the workshops link.

## AT&L WORKFORCE—LEADERSHIP CHANGES

### AIR FORCE MATERIEL COMMAND VICE COMMANDER'S RETIREMENT SPARKS SERIES OF AFMC MOVES

**A**ir Force officials announced Oct. 8 that **Lt. Gen. Charles Coolidge Jr.**, vice commander, Air Force Materiel Command, will retire following a 36-year Air Force career effective Jan. 1, 2004.

The president has nominated **Lt. Gen. Richard Reynolds**, presently the Aeronautical Systems Center commander at Wright-Patterson AFB, Ohio, to be the next AFMC vice commander.

Coolidge has been AFMC's second in charge since February 2000. His career took him to duties in a dozen states and a handful of foreign countries. He commanded three Air Force wings and served on the staffs of four major commands. He also served on the Joint Staff and was that body's representative to the United States-U.S.S.R. Standing Consultative Commission, which met biannually in Geneva. The general is a command pilot with approximately 4,000 flying hours.

Reynolds, once confirmed by the Senate, is slated to take on AFMC's vice commander duties which include helping manage a major command employing more than 80,000 military members and Defense Department civilians. They conduct research, development, test and evaluation and provide the acquisition management and logistics support necessary for Air Force weapons systems to operate in war and peace.

Coolidge's retirement and Reynolds' subsequent move to AFMC headquarters sparked a series of senior offi-

cer moves in AFMC units. They are: **Lt. Gen. William Looney** will leave his post as Electronic Systems Center commander at Hanscom Air Force Base, Mass., to replace Reynolds as Aeronautical Systems Center commander. ESC develops and acquires electronic command and control systems that gather and analyze information on potentially hostile forces, enabling commanders to make quick decisions and rapidly pass them on to their forces.

The president nominated **Maj. Gen. Charles Johnson II** for promotion to lieutenant general and, with approval by the Senate, he will be assigned as the new Electronic Systems Center commander as Looney departs. Johnson is currently the Oklahoma City Air Logistics Center commander at Tinker Air Force Base, Okla. **Maj. Gen. Terry Gabreski** will leave her post as AFMC's logistics director to take on the Oklahoma City ALC commander duties as Johnson departs. The center is one of three air logistics centers in the command and maintains and repairs a variety of aircraft including bombers, refuelers, and reconnaissance aircraft. Many crucial airborne accessories are also maintained at Tinker.

**Brig. Gen. Gary McCoy** will take on the AFMC logistics director duties as Gabreski departs. McCoy is currently the Air Force maintenance deputy director in the deputy chief of staff for installations and logistics office in the Pentagon.

**Allen Beckett**, a civilian in the senior executive service, will move from the principal assistant deputy under secretary of defense for logistics and materiel readiness in the under secretary of defense for acquisition, technol-

ogy and logistics office in the Pentagon to take over McCoy's duties. Dates for formal change of command ceremonies have not been determined.

## OFFICE OF THE SECRETARY OF DEFENSE BEEHLER TO LEAD DOD ENVIRONMENTAL POLICY (DEC. 4, 2003)

**D**eputy Under Secretary of Defense for Installations and Environment Raymond F. DuBois has announced the selection of Alex Albert Beehler as the assistant deputy under secretary of defense for Environment, Safety, and Occupational Health. Beehler replaces John Paul Woodley who was recently appointed assistant secretary of the Army for civil works.

Beehler will serve as the principal assistant and advisor to DuBois for all environmental, safety, and occupational health policies and programs in the Department of Defense. Those programs include cleanup at active and closing bases, compliance with environmental laws, conservation of natural and cultural resources, pollution prevention, environmental technology, fire protection, safety and explosive safety, and pest management and disease control for defense activities worldwide. He will also advise DuBois on international military agreements and programs pertaining to environmental security.

## FLAG OFFICER ASSIGNMENT (DEC. 8, 2003)

**C**hief of Naval Operations Adm. Vern Clark announced today the following flag officer assignment: **Navy Rear Adm. (lower half) (selectee) Martin J. Brown** is being assigned as deputy for acquisition and business management, Office of the Assistant Secretary of the Navy for Research, Development and Acquisition, Arlington, Va. Brown is currently serving as commander, Naval Supply Systems Command, N132, Arlington Detachment, Arlington, Va.

## DEFENSE CONTRACT MANAGEMENT AGENCY FIRST DCMA DIRECTOR RETIRES

**A**rmy Brig. Gen. Edward M. Harrington retired Dec. 9, 2003, after more than 33 years of distinguished military service. Harrington became director of the Defense Contract Management Agency (DCMA) just after DCMA became an independent combat support agency, no longer a reporting command under the Defense Logistics Agency. As DCMA's director, Harrington reported directly to Michael W. Wynne, the acting under secretary of defense (acquisition, technology and logistics).

During the three years that followed, he led a smooth and positive transformation that resulted in DCMA becoming a streamlined and highly customer-focused DoD agency, supporting all of the major military acquisition programs and the war on terrorism. Harrington also led DCMA through two years of transformation, always believing that transforming for the future is more than improving technology. "It is about innovative performance management and predictive analysis to ensure that contractors and suppliers deliver the right product at the right time, at the right cost," he said.

Harrington is married to the former Jane Sheffer; they have two children: daughter Blaire, currently residing in London, England; and son Seth, a senior at Rutgers University.

## GENERAL OFFICER ANNOUNCEMENT (DEC. 10, 2003)

**S**ecretary of Defense Donald H. Rumsfeld announced today that the president has nominated **Air Force Maj. Gen. Donald J. Wetekam** for appointment to the rank of lieutenant general with assignment as deputy chief of staff for installations and logistics, Headquarters U.S. Air Force, Washington, D.C. Wetekam is currently serving as commander, Warner Robins Air Logistics Center, Air Force Materiel Command, Robins Air Force Base, Ga.

## FLAG OFFICER ASSIGNMENT (DEC. 29, 2003)

**C**hief of Naval Operations Adm. Vern Clark announced today the following flag officer assignment: **Navy Rear Adm. (lower half) Steven L. Enewold** is being assigned as director, Joint Strike Fighter Program, Office of the Secretary of Defense, Arlington, Va. Enewold is currently serving as deputy director for joint air strike technology, Office of the Secretary of Defense, Arlington, Va.

## NEW PROGRAM MANAGER FOR JOINT STRIKE FIGHTER (JAN. 2, 2004)

**T**he Defense Department announced Dec. 29 that **Navy Rear Adm. Steven Enewold** is taking over as program manager of the multibillion-dollar Joint Strike Fighter (JSF) program. Enewold is currently the JSF deputy program manager. He succeeds Air Force Maj. Gen. Jack Hudson, who has led the program since October 2001. Management of the JSF program rotates between the Navy and the Air Force every two years.



**ANNOUNCEMENT FROM DIRECTOR, AIR FORCE SENIOR LEADER MANAGEMENT OFFICE (JAN. 8, 2004)**

**T**he Director of the Air Force Senior Leader Management Office has announced the following general officer and senior leader assignments:

**Maj. Gen. Joseph B. Sovey**—From Director, Space Acquisition, Office of the Under Secretary of the Air Force, Washington, D.C., to Director, Requirements, Headquarters Air Force Materiel Command, Wright-Patterson AFB, Ohio

**Maj. Gen. Craig R. Cooning**—From Vice Commander, Space and Missile Systems Center, Air Force Space Command, Los Angeles AFB, Calif., to Director, Space and Nuclear Deterrence, Office of the Under Secretary of the Air Force, Washington, D.C.

**Brig. Gen. (S) Larry D. James**—Deputy Director, Operations, Headquarters Air Force Space Command, Peterson AFB, Colo., to Vice Commander, Space and Missile Systems Center, Air Force Space Command, Los Angeles AFB, Calif

**David J. Carstairs**—From Program Director, Strategic and Nuclear Deterrence C2, Electronic Systems Center, Air Force Materiel Command, Peterson AFB, Colo., to Director, Defense Information Infrastructure—Air Force, Electronic Systems Command, Air Force Materiel Command, Hanscom AFB, Mass.

**Dr. Dale G. Uhler**—From Deputy Assistant Secretary of the Navy (Space and C4I), Department of the Navy, Pentagon, Washington D.C., to Deputy for Acquisition, United States Special Operations Command, MacDill AFB, Fla.

**PENTAGON'S TOP CONTRACTING OFFICIAL RETURNS TO POST (JAN. 12, 2004)**

**D**eidre Lee, the director, defense procurement and acquisition policy, has returned from an enormously challenging temporary assignment to Iraq's Coalition Provisional Authority. Beginning in October 2003 Lee oversaw the release of over \$5 billion in requests for proposals (RFPs) on Iraq reconstruction work. Her tenure at the Coalition Provisional Authority, originally projected to be 30 days, lasted nearly three months; the RFPs were issued Jan. 7. The new RFPs cover several vital infrastructure sectors such as electrical and communications work, and program management functions. The Army Corps of Engineers will be

in charge of executing many of the reconstruction contracts. Lee's successor has not yet been named.

**DEFENSE ACQUISITION UNIVERSITY COMMANDANT RETIRES**

**A**rmy Col. Ronald C. Flom, commandant of the Defense Acquisition University (DAU), retired from active duty effective Jan. 31, 2004, after completing 29 years and one month of active federal commissioned service in the U.S. Army.

Flom had served as commandant since April 12, 2002. Prior to joining DAU, Flom served as the commander, Defense Contract Management Agency East, Boston, Mass., from September 1999 to April 2002; and as commander, Defense Contract Management Command, Baltimore, Md.

Flom accepted a Senior Executive Service position with the United States Office of Personnel Management (OPM). He began his new career as the Procurement Executive at OPM on Dec. 1, 2003. He and his wife, the former Kim Kil Sun of Mokpo, Korea, have two daughters and will continue to reside in the Washington metropolitan area.

**DEFENSE THREAT REDUCTION AGENCY DTRA CHIEF'S DEPARTURE ANNOUNCED**

**T**he secretary of defense announced the resignation of Stephen M. Younger as director of the Defense Threat Reduction Agency (DTRA), effective Feb. 27, 2004. Younger is expected to return to the Theoretical Division of the Los Alamos National Laboratory, Los Alamos, N.M., as a senior fellow. A replacement for Younger has not been named.

Prior to his arrival on Sept. 1, 2001, to lead DTRA, Younger was the senior associate laboratory director for national security at Los Alamos. In that position, he was responsible for assuring the safety, reliability, and performance of most of the nation's nuclear arsenal.

"The events of Sept. 11 reaffirmed the importance of what DTRA does," said Michael Wynne, acting under secretary of defense for acquisition, technology and logistics.

Younger serves on a number of government committees and has taken a leading role in stimulating the development of a new deterrence strategy for the United States in the post-Cold War era. He is a fellow of the American Physical Society.



ACQUISITION,  
TECHNOLOGY AND  
LOGISTICS

**THE UNDER SECRETARY OF DEFENSE  
3010 DEFENSE PENTAGON  
WASHINGTON, D.C. 20301-3010**

DEC 11 2003



MEMORANDUM FOR: SEE DISTRIBUTION

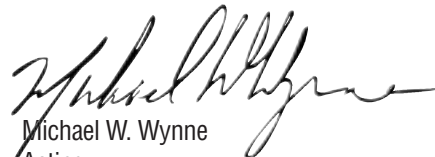
SUBJECT: David Packard Excellence in Acquisition Award Nominations

As in previous years, I am soliciting your nominations for the annual David Packard Excellence in Acquisition Award. This award recognizes organizations, groups, and teams that have demonstrated exemplary innovation and best acquisition practices. Each Military Department and the Defense Logistics Agency may submit nominations for up to five teams and all other Components and OUSD(AT&L) principals may nominate two teams. Specific guidelines on the eligibility, nomination, and selection criteria are contained in the attachment and will be followed in the review process.

This year the ceremony for the presentation of the David Packard awards will be held in the fall of 2004. This will ensure sufficient time for nominees to evaluate and determine their exemplary performance for the calendar year 2003. **Please submit nominations no later than July 1, 2004, to:**

Office of the Under Secretary of Defense (AT&L)  
ATTN: Director, Defense Procurement and Acquisition Policy  
3060 Defense Pentagon, Room 3E1044  
Washington, DC 20301-3060

My point of contact is Ms. Leslie Blackmon at (703) 681-3497 or via e-mail at [leslie.blackmon@osd.mil](mailto:leslie.blackmon@osd.mil).



Michael W. Wynne  
Acting

Attachment:  
As stated

**Editor's note:** To view distribution of this memorandum or download a copy of the attachment, visit the Director, Defense Procurement and Acquisition Policy Web site at <http://www.acq.osd.mil/dpap>.



## DEFENSE ACQUISITION UNIVERSITY FEATURED IN JANUARY 04 FORTUNE MAGAZINE, "TOP 100 COMPANIES TO WORK FOR"

**T**he Defense Acquisition University (DAU) received three awards at the 5th Annual Corporate University Xchange (CUX) Award ceremony held at the Harvard Business School in Boston, Mass., on Dec. 3, 2003. The university earned top honors in the Measurement and Alignment categories, and an honorable distinction in the e-Learning category. Among the finalists in these and other categories were IBM Corporate Learning, the Boeing Leadership Center, General Motors University, and FedEx Ground University.

The awards ceremony was hosted by Corporate University Xchange and Harvard Business School Publishing Division. *Fortune* magazine sponsored the awards and featured the winners in its January "Top 100 Companies to work For" edition.

## PROGRAM EXECUTIVE OFFICE, ENTER- PRISE INFORMATION SYSTEMS PRESS RELEASE

### SPS WINS 2003 GRACIE AWARD

**F**ORT BELVOIR, Va.—Program Executive Office, Enterprise Information Systems (PEO EIS) announces that the Standard Procurement System (SPS) has been awarded a Grace Hopper Government Technology Leadership Award. The Award was presented to Army Col. Jacob Haynes, SPS program manager, during a ceremony Dec. 10, 2003, in Washington, D.C.

"The methods SPS pioneered to ensure the voices and concerns of stakeholders are heard and their issues are addressed have assured SPS the status of the first—and only—department-wide business system," said Program Executive Officer Kevin Carroll. "SPS is not only a cornerstone in the DoD end-to-end acquisition process, but is also an example for department-wide business systems that are developing across the federal government."

There are 12 Gracie Awards; SPS won the award for *Leadership in the Innovative Application of Information Technology that Breaks Down Barriers Between Offices, Agencies and Departments, or between Federal, State and*

*Local Governments*. The Award, which is sponsored by *Government Executive* magazine, has been recognizing federal technology advancement since 1991.

"SPS has broken ground and established processes for working across four military services, 13 departmental agencies, and through a half dozen rungs in the chain of command, all the way up to the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics," noted Haynes, who, just over two years ago, instituted a disciplined configuration management approach that encompassed users, developers, managers, and department leaders spanning the logistics, procurement, and financial management communities in DoD. As a result, "not only does the software address the needs of users, but it also helps meet the needs of the Department's overall force transformation and financial management goals," said Haynes.

The Grace Hopper Government Technology Leadership Awards salute projects that have directly aided the missions of federal organizations by boosting efficiency and effectiveness, lowering costs, and/or improving service to the public through original uses of technology.

PEO EIS, which took over PEO responsibilities for SPS from the Defense Contract Management Agency on Oct. 1, 2003, provides network-centric knowledge-based business and combat service support systems and technology solutions to assure the U.S. Army victory through information dominance.



Rear Adm. Grace Murray Hopper, USN  
(1906-1992) DoD Photo, circa 1981

### DEPARTMENT OF DEFENSE NEWS RELEASE (DEC. 10, 2003) **DOD RECOGNIZES MANUFACTURING TECHNOLOGY ACHIEVEMENTS**

**T**he fifth annual Defense Manufacturing Technology Achievement Award was presented to the Laser Additive Manufacturing and Laser Shock Peening (LSP) initiatives on Dec. 2 at the Defense Manufacturing Conference, Washington, D.C.

The award recognizes Defense and private sector individuals responsible for developing innovative manufacturing processes that improve the affordability, cycle time, readiness, and availability of weapon systems and components for warfighter needs. Sue Payton, deputy under secretary of defense, advanced systems and concepts, presented the award.

The **Laser Additive Manufacturing (LAM) team**, consisting of representatives from Army, Navy, Air Force, Defense Logistics Agency, Pratt and Whitney, AeroMet Corp., Lockheed Martin, The Boeing Co., Northrop Grumman and MTS Systems Corp., was recognized for developing and implementing an innovative manufacturing process that has given birth to a new industry.

The process is based on stereolithography, utilizing software to convert a computer-assisted data file to a sliced format, with parts built one layer at a time, enabling manufacturing-on-demand. LAM was applied to aluminum F-15 Strike Eagle pylon ribs that were failing prematurely. Action in the Iraq war depleted the remaining inventory. Ship sets made from titanium replaced the failed aluminum components in only two months, meeting the surge demand for aircraft mission availability, improving safety, and extending the pylon part life by a factor of five.

The **Laser Shock Peening (LSP) team**, comprised of representatives from Air Force, Army, Pratt & Whitney, General Electric Aircraft Engine, LSP Technologies, and AT&T Government Solutions, developed the laser shock peening to increase the durability of titanium turbine engine fan blades and decrease their sensitivity to foreign object damage.

LSP uses a high-energy laser pulse to impart an intense shock wave into the surface of metal parts, generating compressive stresses, which greatly improve fatigue properties and toughness. Implementation on turbine engine airfoils has reduced maintenance costs, improved reliability and safety, resulting in increased operational availability of combat aircraft.

Application to engine blades for the B-1B Lancer, F-16 Falcon, and F/A-22 Raptor has avoided over \$59 million in costs. The technology is being evaluated for transmission gears, turbine engine blades in tanks, and other Army ground vehicles and aircraft landing gear components.

### **NAVAL SUPPLY SYSTEMS COMMAND PRESS RELEASE (JAN. 14, 2004) MICROSOFT GOVERNMENT INNOVATION AWARD GOES TO NAVY EBUSINESS OPERATIONS OFFICE**

**T**he Department of the Navy (DON) eBusiness Operations Office received the Microsoft Government Innovation Award at the annual Microsoft Navy-Marine Corps Symposium on Dec. 9, 2003, at Microsoft's corporate headquarters in Redmond, Wash.

The DON eBusiness Operations Office received this award in recognition of "its investment in innovative solutions that have an immediate and positive impact on fleet decisions' agility," according to a Microsoft spokesperson. The DON eBusiness Operations Office earned this recognition for sponsoring the Integrated Interactive Data Briefing Tool (IIDBT) project. The IIDBT, piloted with 2<sup>nd</sup> Fleet in Norfolk, Va., provides information to the Commander and other 2<sup>nd</sup> Fleet decision makers in a dynamic, interactive environment using commercial technology and Web services. IIDBT re-engineered the daily operational brief utilizing commercial off-the-shelf (COTS) products to access and share information using XML Web services within the Navy's intranet.

"By re-engineering the daily operational brief with commercial off-the-shelf products, this tool decreases time previously required to assemble key information on command, control, and readiness systems," said Karen Meloy, Deputy Commander of the eBusiness Operations Office. "By sponsoring this project, we are delivering on our mission to bring innovation to the Navy and support the warfighter," Meloy added.

The DON eBusiness Operations Office helps Navy and Marine Corps e-business concepts to become realities. Pilot submissions from Navy and Marine Corps commands are evaluated in the first quarter of the fiscal year. Ideas for pilot projects may be submitted to <<http://www.don-ebusiness.navsup.navy.mil>>. The DON eBusiness Operations Office is the executive agent for DoD e-business pilot projects. For questions on pilot projects contact Mark Foster at [mark.s.foster@navy.mil](mailto:mark.s.foster@navy.mil), or phone 717-605-9358, DSN 430-9358.





# Acquisition & Logistics Excellence

An Internet Listing Tailored to the Professional Acquisition Workforce

Surfing the Net

## Department of Defense

### Under Secretary of Defense (Acquisition, Technology and Logistics) (USD[AT&L])

<http://www.acq.osd.mil/>

ACQWeb offers a library of USD(AT&L) documents, a means to view streaming videos, and jump points to many other valuable sites.

### USD(AT&L) Knowledge Sharing System (formerly Defense Acquisition Desk-book)

<http://akss.dau.mil>

Automated acquisition reference tool covering mandatory and discretionary practices.

### Director, Defense Procurement and Acquisition Policy (DPAP)

<http://www.acq.osd.mil/dpap>

Procurement and Acquisition Policy news and events; reference library; DPAP organizational breakout; acquisition education and training policy and guidance.

### DoD Inspector General

<http://www.dodig.osd.mil/pubs/index.html>

Search for audit and evaluation reports, Inspector General testimony, and planned and ongoing audit projects of interest to the acquisition community.

### Deputy Director, Systems Engineering, USD(AT&L/IO/SE)

<http://www.acq.osd.mil/io/se/index.htm>

Systems engineering mission; Defense Acquisition Workforce Improvement Act information, training, and related sites; information on key areas of systems engineering responsibility.

### Defense Acquisition University (DAU)

<http://www.dau.mil>

DAU Course Catalog, *Defense AT&L* magazine and *Acquisition Review Quarterly* journal; course schedule; policy documents; guidebooks; and training and education news for the Defense Acquisition Workforce.

### Defense Acquisition University Distance Learning Courses

<http://www.dau.mil/registrar/apply.asp>

Take DAU courses online at your desk, at home, at your convenience!

### Army Acquisition Support Center

<http://asc.army.mil>

News; policy; *Army AL&T Magazine*; programs; career information; events; training opportunities.

### Assistant Secretary of the Army (Acquisition, Logistics & Technology)

<https://webportal.saa.t.army.mil/>

ACAT Listing; ASA(ALT) Bulletin; digital documents library; ASA(ALT) organization; quick links to other Army acquisition sites.

### Navy Acquisition Reform

<http://www.acq-ref.navy.mil>

Acquisition policy and guidance; World-class Practices; Acquisition Center of Excellence; training opportunities.

### Navy Acquisition, Research and Development Information Center

[http://www.onr.navy.mil/sci\\_tech/industrial/nardic/](http://www.onr.navy.mil/sci_tech/industrial/nardic/)

News and announcements; acronyms; publications and regulations; technical reports; "How to Do Business with the Navy"; much more!

### Naval Sea Systems Command

<http://www.navsea.navy.mil>

Total Ownership Cost (TOC); documentation and policy; Reduction Plan; Implementation Timeline; TOC reporting templates; Frequently Asked Questions.

### Navy Acquisition and Business Management

<http://www.abm.rda.hq.navy.mil>

Policy documents; training opportunities; guides on areas such as risk management, acquisition environmental issues, past performance, and more; news and assistance for the Standardized Procurement System (SPS) community; notices of upcoming events.

### Navy Best Manufacturing Practices Center of Excellence

<http://www.bmpcoe.org>

A national resource to identify and share best manufacturing and business practices being used throughout industry, government, and academia.

### Naval Air Systems Command (NAVAIR)

<http://www.navair.navy.mil>

Provides advanced warfare technology through the efforts of seamless, integrated, worldwide network of aviation technology experts.

### Space and Naval Warfare Systems Command (SPAWAR)

<https://e-commerce.spawar.navy.mil>

Your source for SPAWAR business opportunities, acquisition news, solicitations, and small business information.

### Joint Interoperability Test Command (JITC)

<http://jitc.fhu.disa.mil>

Policies and procedures for interoperability certification. Access to lessons learned; link for requesting support.

### Air Force (Acquisition)

<http://www.safaq.hq.af.mil/>

Policy; career development and training opportunities; reducing TOC; library; links.

### Air Force Materiel Command (AFMC)

**Contracting Laboratory's FAR Site**

<http://farsite.hill.af.mil/>

FAR search tool; *Commerce Business Daily* Announcements (CBDNet); *Federal Register*; Electronic Forms Library.

### Defense Systems Management College (DSMC)

<http://www.dau.mil>

DSMC educational products and services; course schedules; job opportunities.

### Defense Advanced Research Projects Agency (DARPA)

<http://www.darpa.mil>

News releases; current solicitations; "Doing Business with DARPA."

### Defense Information Systems Agency (DISA)

<http://www.disa.mil>

Structure and mission of DISA; Defense Information System Network; Defense Message System; Global Command and Control System; much more!

### National Geospatial-Intelligence Agency

<http://www.nima.mil>

Imagery; maps and geodata; Freedom of Information Act resources; publications.

### Defense Modeling and Simulation Office (DMSO)

<http://www.dmsomil>

DoD Modeling and Simulation Master Plan; document library; events; services.

### Defense Technical Information Center (DTIC)

<http://www.dtic.mil/>

Technical reports; products and services; registration with DTIC; special programs; acronyms; DTIC FAQs.

### Defense Electronic Business Program Office (DEBPO)

<http://www.acq.osd.mil/dpap/ebiz>

Policy; newsletters; Central Contractor Registration; Assistance Centers; DoD EC Partners.

### Open Systems Joint Task Force

<http://www.acq.osd.mil/osjtf>

Open Systems education and training opportunities; studies and assessments; projects, initiatives and plans; reference library.

### Government-Industry Data Exchange Program (GIDEP)

<http://www.gidep.org/>

Federally funded co-op of government-industry participants, providing an electronic forum to exchange technical information essential to research, design, development, production, and operational phases of the life cycle of systems, facilities, and equipment.



# Acquisition & Logistics Excellence

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Surfing the Net

## Federal Civilian Agencies

### Acquisition Reform Network (AcqNet)

<http://www.arinet.gov/>

Virtual library; federal acquisition and procurement opportunities; best practices; electronic forums; business opportunities; acquisition training; Excluded Parties List.

### Committee for Purchase from People Who are Blind or Severely Disabled

<http://www.jwod.gov>

Provides information and guidance to federal customers on the requirements of the Javits-Wagner-O'Day (JWOD) Act.

### Federal Acquisition Institute (FAI)

<http://www.faionline.com>

Virtual campus for learning opportunities as well as information access and performance support.

### Federal Acquisition Jump Station

<http://prod.nais.nasa.gov/pub/fedproc/home.html>

Procurement and acquisition servers by contracting activity; CBDNet; Reference Library.

### Federal Aviation Administration (FAA)

<http://www.asu.faa.gov>

Online policy and guidance for all aspects of the acquisition process.

### General Accounting Office (GAO)

<http://www.gao.gov>

Access to GAO reports, policy and guidance, and FAQs.

### General Services Administration (GSA)

<http://www.gsa.gov>

Online shopping for commercial items to support government interests.

### Library of Congress

<http://www.loc.gov>

Research services; Congress at Work; Copyright Office; FAQs.

### National Technical Information Service (NTIS)

<http://www.ntis.gov/>

Online service for purchasing technical reports, computer products, videotapes, audiocassettes, and more!

### Small Business Administration (SBA)

<http://www.sbaonline.sba.gov>

Communications network for small businesses.

### U.S. Coast Guard

<http://www.uscg.mil>

News and current events; services; points of contact; FAQs.

### U.S. Department of Transportation MARITIME Administration

<http://www.marad.dot.gov/>

Provides information and guidance on the requirements for shipping cargo on U.S. flag vessels.

## Topical Listings

### Acquisition Community Connection (ACC)

<http://acc.dau.mil>

Includes risk management, contracting, system engineering, total ownership cost (TOC) policies, procedures, tools, references, publications, Web links, and lessons learned.

### Aging Systems Sustainment and Enabling Technologies (ASSET)

<http://catt.bus.okstate.edu/asset/index.html>

A government-academic-industry partnership. The technologies and processes developed in the ASSET program increase the DoD supply base, reduce the time and cost associated with parts procurement, and enhance military readiness.

### Commerce Business Daily

<http://cbdnet.gpo.gov>

Access to current and back issues with search capabilities; business opportunities; interactive yellow pages.

### DoD Defense Standardization Program

<http://www.dsp.dla.mil>

All about DoD standardization; key Points of Contact; FAQs; Military Specifications and Standards Reform; newsletters; training; nongovernment standards; links to related sites.

### Earned Value Management

<http://www.acq.osd.mil/pm>

Implementation of Earned Value Management; latest policy changes; standards; international developments; active noteboard.

### Fedworld Information

<http://www.fedworld.gov>

Comprehensive central access point for searching, locating, ordering, and acquiring government and business information.

### MANPRINT (Manpower and Personnel Integration)

<http://www.manprint.army.mil>

Points of contact for program managers; relevant regulations; policy letters from the Army Acquisition Executive; as well as briefings on the MANPRINT program.

### Office of Force Transformation

<http://www.oft.osd.mil>

Site is devoted to news on transformation policies, programs, and projects throughout the DoD and the Services.

### Project Management Institute

<http://www.pmi.org>

Program management publications, information resources, professional practices, and career certification.

### Software Program Managers Network

<http://www.spmn.com>

Site supports project managers, software practitioners, and government contractors. Contains publications on highly effective software development best practices.

## Industry and Professional Organizations

### Association of Old Crows (AOC)

<http://www.crows.org>

Association news; conventions, conferences and courses; *Journal of Electronic Defense* magazine.

### DAU Alumni Association

<http://www.dauaa.org>

Acquisition tools and resources; government and related links; career opportunities; member forums.

### Electronic Industries Alliance (EIA)

<http://www.eia.org>

Government Relations Department; includes links to issue councils; market research assistance.

### International Society of Logistics

<http://www.sole.org/>

Online desk references that link to logistics problem-solving advice; Certified Professional Logistician certification.

### National Contract Management Association (NCMA)

<http://www.ncmahq.org>

"What's New in Contracting?"; educational products catalog; career center.

### National Defense Industrial Association (NDIA)

<http://www.ndia.org>

Association news; events; government policy; *National Defense* magazine.

If you would like to add your defense acquisition or acquisition and logistics excellence-related Web site to this list, please put your request in writing and fax it to Judith Greig, (703) 805-2917. DAU encourages the reciprocal linking of its Home Page to other interested agencies. Contact the DAU Webmaster at: [webmaster@dau.mil](mailto:webmaster@dau.mil).

# Defense AT&L Writer's Guidelines in Brief

## Purpose

The purpose of *Defense AT&L* magazine is to instruct members of the DoD acquisition, technology & logistics (AT&L) workforce and defense industry on policies, trends, legislation, senior leadership changes, events, and current thinking affecting program management and defense systems acquisition, and to disseminate other information pertinent to the professional development and education of the DoD Acquisition Workforce.

## Subject Matter

**We do print** feature stories that include real people and events. Stories that appeal to our readers—who are senior military personnel, civilians, and defense industry professionals in the program management/acquisition business—are those taken from real-world experiences vs. pages of researched information. **We don't print** academic papers, fact sheets, technical papers, or white papers. We don't use endnotes or references in our articles. Manuscripts meeting these criteria are more suited for DAU's journal, *Acquisition Review Quarterly*.

Defense AT&L reserves the right to edit manuscripts for clarity, style, and length. Edited copy is cleared with the author before publication.

## Length

Articles should be 2,000 - 3,000 words or about 10 double-spaced pages, each page having a 1-inch border on all sides. For articles that are significantly longer, please query first by sending an abstract.

Include a short biographical sketch of the author(s)—about 25 words—including current position and educational background.

## Style

Good writing sounds like comfortable conversation. Write naturally and avoid stiltedness. Except for a rare change of pace, most sentences should be 25 words or less, and paragraphs should be six sentences. Avoid excessive use of capital letters. Be sure to define all acronyms. Consult "Tips for Authors" at <<http://www.dau.mil/pubs/pm/articles.asp>>.

## Presentation

Manuscripts should be submitted as Microsoft Word files. Please use Times Roman or Courier 11 or 12 point. Double space your manuscript and do not use columns or any formatting other than bold, italics, and bullets. Do not embed or import graphics into the document file; they must be sent as separate files (see next section).

## Graphics

We use figures, charts, and photographs (black and white or color). Photocopies of photographs are not acceptable. Include brief, numbered captions keyed to the figures and

photographs. Include the source of the photograph. We will publish no photograph or diagram from outside the DoD without written permission from the copyright owner. *Defense AT&L* does not guarantee the return of original photographs.

We accept digital files, which may be sent as e-mail attachments or mailed on zip disk(s) or CD. Each figure or chart must be saved as a separate file in the original software format in which it was created and must meet the following publication standards: color and greyscale (if possible); JPEG or TIF files sized to print no smaller than 3 x 5 inches at a minimum resolution of 300 pixels per inch; PowerPoint slides; EPS files generated from Illustrator (preferred) or Corel Draw. For other formats, provide program format as well as EPS file).

Questions on graphics? Call (703) 805-4287, DSN 655-4287 or e-mail [vaworkorders@dau.mil](mailto:vaworkorders@dau.mil). Subject line: Defense AT&L graphics.

## Clearance and Copyright Release

All articles written by authors employed by or on contract with the U.S. Government must be cleared by the author's public affairs or security office prior to submission.

Each author must certify that the article is a "Work of the U.S. Government." Go to <<http://www.dau.mil/pubs/pm/articles.asp>>. Scroll to the bottom of the screen and click on "Copyright Forms." Print, fill out in full, sign, and date the form. Submit the form with your article or fax it to (703) 805-2917, ATTN: Rosemary Kendricks. Your article will not be reviewed until we receive the copyright form. All articles printed in *Defense AT&L* are in the public domain and posted to the DAU Web site. In keeping with DAU's policy of widest dissemination of its published products, no copyrighted articles are accepted.

## Submission Dates

Issue	Author's Deadline
January-February	1 November
March-April	1 January
May-June	1 March
July-August	1 May
September-October	1 July
November-December	1 September

## Submission Procedures

Articles may be submitted as MS Word files by e-mail to [judith.greig@dau.mil](mailto:judith.greig@dau.mil) or on disk to: DAU Press, ATTN: Judith Greig, 9820 Belvoir Rd., Suite 3, Fort Belvoir VA 22060-5565. All submissions must include the author's name, mailing address, office phone number (DSN and commercial), e-mail address, and fax number.

Receipt of your submission will be acknowledged within five working days.

<http://www.dau.mil/pubs/pm/articles.asp>

